

SECTION 4.0

DESCRIPTION OF AFFECTED ENVIRONMENT

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4.1 INTRODUCTION

The Description of the Affected Environment was originally published in Section 3.0 of the 2003 Final EIS, with each resource discussed by subsection as set forth below:

1. Land Resources (Section 3.2),
2. Water Resources (Section 3.3),
3. Air Quality (Section 3.4),
4. Biological Resources (Section 3.5),
5. Cultural and Paleontological Resources (Section 3.6),
6. Socioeconomic Conditions (Section 3.7),
7. Resources Use Patterns (Section 3.8),
8. Public Services (Section 3.9),
9. Other Values (Section 3.10), and
10. Environmental Justice (Section 3.11).

The sections from the *Final Environmental Impact Statement: Jamul Indian Village* (2003) are hereby incorporated into the SEIS by reference. The 2003 Final EIS can be reviewed at the JIV website: <http://www.jamulindianvillage.com/relevant-documents/>. Each resource area identified above has been updated where needed in Section 4.0 of the SEIS. Information contained herein is also reproduced from the various Affected Environment subsection discussions presented in the 2013 Final TEE.

4.2 LAND RESOURCES

The Land Resources discussion of the 2003 Final EIS addressed Topography (3.2.1), Geologic Setting (3.2.2), Soils (3.2.3), Seismicity (3.2.4), and Mineral Resources (3.2.5). An update to each of these discussions, where needed, is presented below. Some information contained below is the same as presented in the 2003 Final EIS, because environmental circumstances remain unchanged.

4.2.1 TOPOGRAPHY

The elevation of the Gaming Facility site ranges from 870 to 960 feet. The Gaming Facility site lies on moderately steep slopes. The steeper gradients are situated in the southwestern portion of the area. The site slopes down from the east and west to Willow Creek, which bisects and drains the entire Gaming Facility site. Willow Creek flows south to Jamul Creek.

4.2.2 GEOLOGIC SETTING

The Gaming Facility site is located within the foothills of the Jamul Mountains, south of the town of Jamul. In the vicinity, pre-Tertiary granitic and metavolcanic bedrock is locally overlain by Quaternary alluvial and colluvial deposits which are locally covered by shallow fill. **Figure 4-1** shows a map of the geologic units in the vicinity, where Ec = Eocene sandstone, gb = gabbro, gr-m = gneiss, grMZ = granodiorite and quartz monzonite, m = schist/gneiss, Mc = sandstone, Mzv = felsic volcanic rock, P = Pleistocene sandstone, and Q = Quaternary alluvium. Surficial materials include undocumented fill, alluvium, colluvium and possible landslide deposits. The fill at the site consists of silt and sand. It is composed of locally derived stream terrace deposits and colluvium generated from cutting into the natural slope during grading for previously existing structures. Alluvial deposits are material such as sand, silt, or clay that has been deposited by streams. Alluvial deposits are present along the drainage which traverses the site. The alluvial soils are composed of sand and silty sand with scattered gravel. Colluvium is soil material or rock fragments that have moved by creep, slide, or local wash and were deposited at the base of steep slopes. Colluvium locally covers the granitic bedrock on the slopes. The colluvial materials consist of sand and silt mixtures. Possible landslide deposits at the site were mapped based on surficial expression and stereoscopic photographs. Landslide deposits are composed of intermixed surficial soil and granitic bedrock. Pre-Tertiary granitic bedrock underlies the site soil deposits. The granitic bedrock is considered as undifferentiated igneous crystalline bedrock that locally forms bold outcrops. The granitic bedrock is composed mainly of diorite with contact metamorphic zones. Pre-Tertiary volcanic and metamorphic bedrock is exposed on the southwest corner of the site. The bedrock forms outcrops and is hard and dense. It is composed of intermixed volcanic and sedimentary rocks that have experienced low-grade metamorphism.

4.2.3 SOILS

The soils of the Gaming Facility area are eroded coarse sandy loams to loams which have developed from granodiorite, granitic alluvium, basic igneous rock, or metamorphosed sandstone. Soils that have been formed from basic igneous rock and granitic alluvium can be found on terraces or alluvial fans. Some upland soils have been developed from metamorphosed sandstone and granodiorite. Soils found on gently rolling to hilly topography have formed in material weathered from granitic rock (Applied Engineering and Geology, 2003).

The United States Department of Agriculture (USDA), Natural Resource Conservation Service (NRCS) has mapped 10 soil types in the vicinity of the Gaming Facility, but primarily the Cieneba loam (codes CIE2, CmrG), Escondido loam (Esc), Fallbrook loam

(FaD2, FaE2), Friant loam (FxG), Las Posas loam (LpC2, LpE2), Ramona loam (RaC2), and Wyman loam (WmC). **Figure 4-2** displays these soil types and their codes in relation to the Gaming Facility area. NRCS classifies the soils according to their shrink/swell nature: the Cienaba, Escondido, and Friant soils have low shrink/swell capabilities; the Fallbrook, Ramona, and Wyman soils have moderate shrink/swell capabilities; and the Las Posas soils have high shrink/swell capabilities. The soils are well drained to somewhat excessively drained and have a low to moderately low water-holding capacity and slow to moderately rapid permeability. Runoff is slow to very rapid. Soil depth to bedrock varies with topography (0 to over 70 inches) (Applied Engineering and Geology, 2003).

In the land capability classification system used by the NRCS, soils are grouped by Soils Capability Class: Class I is the least restricted with Class VIII being severely limited and nearly precluded from use for commercial crop production. Prime soils are those located on land which has a combination of physical and chemical characteristics best suited to produce forage, feed, food, and other crops. Based on information from the NRCS soils survey, Soils Capability classes on the site range from II to VII. The capability subclassification indicates that the Las Posas fine sandy loam, Escondido very fine sandy loam, Wyman loam, Fallbrook sandy loam, Ramona sandy loam have a main limitation of erosion. The Friant rocky fine sandy loam and Cienaba very rocky coarse sandy loam have main limitation factors of shallow soil depths as well as being stony and subject to drought conditions.

Soils on the alluvial fan terraces are unconsolidated. As a result, runoff from storm events can pick up these unconsolidated soils and transport them. Intense storm events transport sediment from the alluvial fans terraces to the flat valley floor. The transported debris is immediately deposited. Rain events may transport sediment from deposited material into the wash area.

4.2.4 SEISMICITY

Over the last two centuries, only one large-magnitude earthquake has occurred in the San Diego County area. However, San Diego County area has been subject to ground shaking on many other occasions as a result of earthquakes in other regions. The Gaming Facility area is not mapped within a State-delineated Earthquake Fault Zone and there are no known faults in the immediate vicinity of the study area. The closest active fault or fault zone to the site is the Rose Canyon fault zone, located about 15.5 miles to the west-southwest. The Elsinore Fault is located approximately 30 miles to the northeast and the San Andreas Fault is located approximately 80 miles to the east.

As defined by the California Geological Survey, an active fault is one that has had surface displacement within the Holocene Epoch (roughly the last 11,000 years). This definition is used in delineating Earthquake Fault Zones as mandated by the Alquist-Priolo Special Studies Zones Act of 1972 and revised in 1994 and 1997 as the Alquist-Priolo Earthquake Fault Zoning Act and Earthquake Fault Hazard Zones. The intent of this act is to require fault investigations on sites located within Earthquake Fault Hazard Zones to preclude new construction of certain habitable structures across the trace of active faults. Based on the Construction Testing & Engineering (2011) review of available literature, the site is not located within an Alquist-Priolo Earthquake Fault Zone. No evidence of active faulting is present on the site.

The California Geological Survey broadly groups faults as “Class A” or “Class B” (Cao et al, 2003). Class A faults are identified based upon relatively well constrained paleoseismic activity, and a fault slip rate of more than 5 mm per year. In contrast, Class B faults have comparatively less defined paleoseismic activity and are considered to have a fault slip rate less than 5 mm per year. The following **Table 4-1** presents the nearest faults to the site and their magnitude and fault classification.

Liquefaction occurs when saturated fine-grained sands, silts or low plasticity clays lose their physical strength during earthquake-induced shaking and behave as a liquid. This is due to loss of point-to-point grain contact and transfer of normal stress to the pore water. Liquefaction potential varies with groundwater level, soil type, material gradation, relative density, and the intensity and duration of ground shaking. Since the site soils and bedrock are very dense, the potential for liquefaction is considered low.

4.2.5 MINERAL RESOURCES

The California Geological Survey classifies land in western San Diego County according to the presence or absence of construction aggregate resources. However, the Gaming Facility area itself does not offer a suitable combination of soils and minerals types to warrant extraction of aggregates. There are no known mapped mines within the area. The geologic surveys performed for the Gaming Facility did not indicate any significant mineral resources.

4.2.6 GEOLOGIC HAZARDS

Geologic hazards in the area are limited primarily to those caused by strong shaking from earthquake-generated ground motions (**Appendix 2**). Nevertheless, presented next is a discussion of potential geologic hazards affecting the design and development of the Gaming Facility.

**TABLE 4-1
PARAMETERS FOR EARTHQUAKE FAULTS IN THE VICINITY**

FAULT NAME	DISTANCE FROM SITE (miles)	MAXIMUM EARTHQUAKE MAGNITUDE	CLASSIFICATION
Rose Canyon	15.5	7.2	B
Coronado Bank	27.5	7.6	B
Elsinore-Julian	32.2	7.1	A
Elsinore-Coyote Mountain	34.6	6.8	A
Earthquake Valley	35.6	6.5	B
Newport-Inglewood (Offshore)	45.2	7.6	B
Elsinore-Temecula	47.3	6.6	A
San Jacinto-Coyote Creek	52.0	6.8	A
San Jacinto-Borrego	52.2	6.6	A
San Jacinto-Anza	55.7	7.2	A
SOURCE: Construction Testing & Engineering, 2011			

4.2.6.1 Tsunamis and Seiche Evaluation

The site is about 15 miles inland from the Pacific Ocean at an elevation of approximately 900 feet above sea level. Therefore, risk of damage from seismic sea waves (tsunamis) is not anticipated (**Appendix 2**). The site is not downslope of a large body of water that could adversely affect the site in the event of earthquake-induced failures or seiches (wave oscillations in an enclosed or semi-enclosed body of water).

4.2.6.2 Landsliding

Based on surface expression, possible landslides have been mapped in the northeast corner of the Gaming Facility site (**Appendix 2**).

4.2.6.3 Compressible and Expansive Soils

Encountered site soils consisted of non-expansive sands and hard bedrock with low compressibility. Therefore, compressible and/or expansive site materials are not anticipated to adversely impact the Gaming Facility development (**Appendix 2**).

4.2.6.4 Fault Rupture and Earthquake Hazard Evaluations

Over the last two centuries, only one large-magnitude earthquake has occurred in the San Diego County area. However, San Diego County area has been subject to ground shaking on many other occasions as a result of earthquakes in other regions. The project area is not mapped within a State delineated Earthquake Fault Zone and there are no known faults in the immediate vicinity of the study area. The closest active fault or fault zone to the site is the Rose Canyon fault zone, located about 15.5 miles to the west-southwest. The Elsinore Fault is located approximately 30 miles to the northeast and the San Andreas Fault is located approximately 80 miles to the east.

4.2.7 REGULATORY SETTING

4.2.7.1 Federal Regulations

For geologic and topographic features, the key federal law is the Historic Sites Act of 1935, which establishes a national registry of natural landmarks and protects “outstanding examples of major geological features.” The Gaming Facility area does not contain any rare, high quality, or scientifically significant geologic or topographic resources, and does not encompass any areas designated as National Natural Landmarks.

4.2.7.2 State Regulations

Alquist-Priolo Earthquake Fault Zoning Act (Amended in 1994) (California Public Resources Code Section 25523(a); 20 California Code of Regulations (CCR) 1752(b) and (c)) was created to mitigate seismic hazards. Its main purpose is to prevent the construction of buildings on the surface trace of active faults. Before a project can be permitted in an Alquist-Priolo Earthquake Fault Zone, municipalities must require a geologic investigation to demonstrate that potential buildings would not be constructed across active faults.

The California Building Code (CBC) contains minimum standards for design and construction of structures in California. Local standards may be adopted if those standards are stricter. Design considerations associated with seismic hazards should address the appropriate building codes.

The Greenbook Standard Specifications for Public Works Construction is produced by a joint committee of the Southern California Chapter of the American Public Works Association and the Southern California Districts of the Associated General Contractors of California. The Greenbook is focused on public works projects and includes geologic and soil standards related to construction materials/methods (e.g., grading and fill/base material placement), utilities, landscaping/irrigation facilities, pipelines, aggregate, and concrete/asphalt pavement.

4.2.7.3 Local Laws, Ordinances, Regulations, and Standards

The County of San Diego Codes and Regulations regulates vegetation clearing and grading through the Clearing of Vegetation/Grading and Clearing Ordinance (No. 9547) (administered by the Dept. of Planning and Landuse). The Sensitive Habitats / Resource Protection Ordinance (Nos. 7968, 7739, 7685 and 7631) protects steep-slope lands, wetlands, floodplains.

4.3 WATER RESOURCES

The Water Resources discussion of the 2003 Final EIS addressed Surface Water, Drainage and Flooding (3.3.1), Groundwater (3.3.2), and Water Quality (3.3.3). An update to each of these discussions, where needed, is presented below. Some information contained below is the same as presented in the 2003 Final EIS because environmental circumstances remain unchanged.

4.3.1 SURFACE WATER, DRAINAGE, FLOODING

The topography of the Gaming Facility site is rolling terrain, with a general slope to the south via the Willow Creek drainage, which bisects the Reservation. **Figure 4-3** shows the relevant USGS 7.5-minute topographic quadrangles “Dulzura” and “Jamul Mountains”. The elevation ranges from approximately 850 feet to 950 feet above mean sea level. The climate is arid, with annual precipitation averaging only about 10 inches (Western Regional Climate Center 2011).

The Reservation is located within a small watershed (approximately 10 square miles) in the headwaters of Jamul Creek north of the Jamul Mountains (**Figure 4-4**). The Reservation is located within the Jamul Hydrologic Subarea (Hydrologic Unit 10.33), which is located within the Dulzura Hydrologic Area of the larger Otay Basin. The Otay Hydrologic Unit consists of the Otay River and its major tributaries. The Otay River is the second largest river draining into San Diego Bay. Damming in the early part of the 20th century created the Otay Reservoirs, which provide drinking water for southern San Diego County (Regional Water Quality Control Board (RWQCB) 2007b). Seventy percent of the Otay River watershed is open and undeveloped; agriculture occurs in ten

percent of the watershed, and urban or industrial land uses occur in twenty percent of the watershed (Regional Water Quality Control Board 2007b). Although the upper parts of the Otay watershed are protected, there has been rapid growth in certain regions, including the Jamul area. Large areas within the watershed are protected by state and federal wildlife refuges, and by the San Diego Water Department. Other major landowners include Caltrans, with jurisdiction over all freeways and highways in the watershed, tribes, and the US Navy (RWQCB 2007b).

The general direction of surface runoff in the area around the Reservation is to the south via Willow Creek, a drainage tributary to Jamul Creek, which is tributary to Dulzura Creek, which terminates in the Lower Otay Reservoir. The Lower Otay Reservoir is the terminus of the second San Diego Aqueduct. Surface runoff from over 160 square miles within the Otay Basin watershed flows ultimately to the south San Diego Bay (Pacific Ocean) (San Diego RWQCB 2007a).

All stormwater originating within the area around the Reservation, including the 4-acre parcel and 87-acre parcel, drains by sheet flow along surface grades to Willow Creek or, to a minor extent, to the ditches of the SR-94 right-of-way. The San Diego County Flood Control District currently maintains culverts along Willow Creek at the following locations: 1) a private roadway about 360 feet north of Melody Road with a 12-inch corrugated metal pipe; 2) Melody Road, with a 60-inch concrete pipe; and 3) JIV's private road, which has a 24-inch corrugated metal pipe. A tributary of Willow Creek collects runoff from a residential development (Calle Mesquite) north of Melody Road, and discharges runoff under Melody road via a 24-inch corrugated metal pipe.

The Reservation site and surrounding area (including the 4-acre parcel and 87-acre parcel) is designated Zone D for areas of undetermined flood risk, according to Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map Panel Number 06073C1975F. Within the Reservation, Willow Creek has a slope gradient of 3 to 4%, with side slopes having a variable gradient of between 12 and 50% (Martin and Ziemniak 2006; San Dieguito Engineering 2012). Results of hydrologic modeling by Martin and Ziemniak (2006) indicate that the flow within the channel during a 100-year storm event is 392 cubic feet per second. The total rainfall that would occur during a 6-hour 100-year rain event in the Jamul region is 3 inches (San Dieguito Engineering 2012).

4.3.2 GROUNDWATER

The RWQCB defines and describes groundwater in the region as follows:

“Ground water is defined as subsurface water that occurs beneath the water table in soils and geologic formations that are fully saturated.....All major drainage basins in the San Diego Region contain ground water basins. The basins are relatively small in area

and usually shallow. Although these ground water basins are limited in size, the ground water yield from the basins has been historically important to the development of the Region. A number of the larger ground water basins can be of future significance in the Region for storage of both imported waters and reclaimed wastewaters. Nearly all of the local ground waters of the Region have been intensively developed for municipal and agricultural supply purposes.” (San Diego RWQCB 2011)

The groundwater in the vicinity of the Reservation flows through the geologic substrata such as alluvium, residuum (unconsolidated, weathered or partly weathered mineral material that accumulated as consolidated rock disintegrated in place), and crystalline bedrock. The effective porosity in crystalline bedrock and residuum is poor; consequently, groundwater occurs predominantly in alluvium. San Diego County well data indicates that in the low areas (inter-mountain basins) such as the Gaming Facility site, average depth to water is about 40 feet, but can vary widely from 7 to 250 feet; in higher areas (such as mountain erosional plains), depth to water is about 93 feet, with a range of 11 feet to 263 feet (San Diego County 1977).

4.3.3 WATER QUALITY

The RWQCB describes the quality of the Otay River watershed as follows: *“The Otay hydrologic unit (HU 910) is a watershed in the southern portion of San Diego County and is home to about 150,000 people and represents an important water resource in one of the most arid regions of the nation. Home to many endemic, rare, and endangered plants and animals, the ecological health of the Otay watershed is of increasing concern”* (RWQCB. 2007b).

The RWQCB assessed Jamul Creek as part of the statewide Surface Water Ambient Monitoring Program (SWAMP). The results of the bioassessment indicated that biological health was very poor, and Jamul Creek “did not support a healthy community of benthic macroinvertebrates”. The following results were also published regarding the assessment of Jamul Creek (RWQCB 2007b):

- Physical habitat was moderately degraded, with only two components (embeddedness and channel flow) showing signs of severe alteration.
- Pesticides and other organic compounds were detected (PAHs, p,p'-DDT, and oxadiazon).
- Ammonia, manganese and specific conductivity exceeded aquatic life thresholds during sampling.
- Sediments were acutely toxic to amphipods (*Hyalella azteca*) in one of 3 samples, and most samples showed algal toxicity.

The study concluded that, “*This study’s assessment of the Otay Hydrologic Unit suggests that the watershed is in moderately poor ecological health. Multiple lines of evidence support this conclusion. For example, several water chemistry constituents exceeded aquatic life thresholds, toxicity was observed at every site, and bioassessment of macroinvertebrate communities were in poor or very poor condition at most sampling events.*” (RWQCB 2007b).

Land uses in the Jamul area have historically been rural in nature, and consisted largely of ranching and some dry crop farming. In the Jamul Creek watershed, cattle grazing has resulted in the introduction of manure into surface waterways and has increased erosion, compaction, and stream-bank degradation near surface waters. These and other effects of cattle grazing typically lead to increased temperature and decreased dissolved oxygen content of surface waterways (RWQCB 2007a).

4.3.3.1 Groundwater Quality

Groundwater in the Jamul area is characterized as shallow and low in volume, and generally unsuitable for domestic or industrial use due to its low yield and due to the presence of high nitrate and total dissolved solids concentrations (RWQCB 2007a,b). The San Diego RWQCB has identified beneficial uses for groundwater resources in the Otay Hydrologic Unit as follows: municipal and domestic supply, agricultural supply, and industrial service supply. The RWQCB has defined water quality objectives to protect these beneficial uses in the Otay Hydrologic Unit, summarized in **Table 4-2**.

TABLE 4-2
WATER QUALITY OBJECTIVES FOR GROUND WATERS IN THE DULZURA
HYDROLOGIC AREA OF THE OTAY HYDROLOGIC UNIT

WATER QUALITY CONSTITUENT	WATER QUALITY OBJECTIVE
Total Dissolved Solids	1,000 mg/L
Chloride	400 mg/L
Sulfate	500 mg/L
Sodium	60 mg/L
Nitrate	10 mg/L
Iron	0.3 mg/L
Manganese	0.05 mg/L
Methylene Blue-Activated Substances	0.5 mg/L
Boron	0.75 mg/L
Turbidity	5 NTU
Color units	15
Fluoride	1.0 mg/L
SOURCE: San Diego Basin Plan (RWQCB 2007a).	

4.3.4 REGULATORY SETTING

4.3.4.1 Federal Regulations

Executive Order 11988 addresses floodplain management. Executive Order 11988 requires the evaluation of actions taken in a floodplain. Specifically, the order states that agencies shall first determine whether a proposed development would occur in a floodplain. Second, if an agency proposes to allow an action to be located in a floodplain, "the agency shall consider alternatives to avoid adverse effects and incompatible development in the floodplains." Finally, if the only practicable alternative action requires siting in a floodplain, the agency shall "minimize potential harm to or within the floodplain." The water quality objectives for surface waters in the Dulzura Hydrologic Area of the Otoy Hydrologic Unit are provided in **Table 4-3**.

TABLE 4-3
WATER QUALITY OBJECTIVES FOR SURFACE WATERS IN THE DULZURA
HYDROLOGIC AREA OF THE OTAY HYDROLOGIC UNIT

WATER QUALITY CONSTITUENT	WATER QUALITY OBJECTIVE
Total dissolved solids	500 mg/L
Chlorides	250 mg/L
Sulfate	250 mg/L
Sodium	60 mg/L
Phosphorus and Nitrogen	0.05 mg/L
Iron	0.3 mg/L
Manganese	0.05 mg/L
Methylene Blue-Activated Substances	0.5 mg/L
Boron	0.75 mg/L
Turbidity	20 NTU
Fluoride	1 mg/L
pH	6.5 to 8.5 pH units
Dissolved Oxygen (warm habitat)	5.0 mg/L minimum
Fecal coliform	200 MPN/100 mL
SOURCE: San Diego Basin Plan (RWQCB 2007a).	

The basic federal law dealing with surface water quality control is the Federal Water Pollution Control Act, which was amended in 1972 and is commonly referred to as the Clean Water Act (CWA). The objective of the CWA is to "restore and maintain the chemical, physical and biological integrity of the Nation's waters" to make all surface waters "fishable" and "swimmable".

The National Pollutant Discharge Elimination System (NPDES) program established pursuant to the CWA (33 USC §§ 1251 to 1387) is a national program for regulating and administering permits for discharges to receiving waters. The U.S. EPA is ultimately charged with regulating discharges to surface waters. In some states, the U.S. EPA has delegated permitting authority to a state agency. However, the U.S. EPA continues to regulate discharges originating on JIV lands into receiving waters. Under the CWA, Indian Tribes can be treated as states for the purposes of the NPDES program if they demonstrate similar management proficiency as the states [33 USC § 1377(e)].

4.3.4.2 State Regulations

The California Water Code contains provisions which control almost every consideration of water and its use. Division 2 of the Water Code provides that the State Board shall consider and act upon all applications for permits to appropriate waters. California Water Code section 2100 provides that the State Board may make a formal determination or judgment in order to protect ground water quality.

Division 7 of the California Water Code is the basic water quality control law for California, entitled the Porter-Cologne Water Quality Control Act. The Porter-Cologne Act establishes a regulatory program to protect water quality and to protect beneficial uses of the state waters. The Porter-Cologne Act established the State Board and the regional boards as the principle state agencies responsible for control of water quality. The Porter-Cologne Act empowers the regional boards to formulate and adopt, for all areas within the regions, a Water Quality Control Plan (Basin Plan) which designates beneficial uses and establishes such water quality objectives as in its judgment would ensure reasonable protection of beneficial uses. Each regional board establishes water quality objectives that would insure the reasonable protection of beneficial uses and the prevention of nuisance. In 1975, the Regional Board published the "Water Quality Control Plan for the San Diego Basin (9)". The 1975 Basin Plan has been amended by the Regional Board on numerous occasions since 1975, and it is reviewed triennially. The latest version is dated 2011, and contains the most current water quality standards.

4.4 AIR QUALITY

The Air Quality discussion of the 2003 Final EIS addressed Regional Meteorology (3.4.1), Pollutants of Concern (3.4.2), and Existing Air Quality (3.4.3). An update to each of these discussions, where needed, is presented below. It may be that some information contained below is the same as presented in the 2003 Final EIS because environmental circumstances remain unchanged.

4.4.1 AIR POLLUTANTS

“Air Pollution” is a general term that refers to one or more chemical substances that degrade the quality of the atmosphere. Individual air pollutants may adversely affect human or animal health, reduce visibility, damage property, and reduce the productivity or vigor of crops and natural vegetation.

Six air pollutants of concern nationwide have been identified by U.S. EPA: carbon monoxide (CO); ozone (O₃); nitrogen dioxide (NO₂); sulfur dioxide (SO₂); lead (Pb); and particulate matter (PM), which is subdivided into two classes based on particle size: fine particles (PM_{2.5}) and inhalable particles (PM₁₀). These pollutants are collectively referred to as criteria pollutants and are discussed in detail below. The sources of these pollutants, their effects on human health and the nation’s welfare, and their final deposition in the atmosphere vary considerably.

In general, ambient concentrations of CO, O₃, and Pb are primarily influenced by motor vehicle activity. Emissions of SO₂ are associated mainly with various stationary sources. Emissions of NO₂ and PM come from both mobile and stationary sources.

The criteria pollutants that are most important for this air quality impact analysis are those that can be traced principally to motor vehicle operation and earth-moving activities. Of these pollutants, CO, nitrogen Oxides (NO_x), and PM are evaluated on a regional or “mesoscale” basis. CO is analyzed on a localized or “microscale” basis in cases of congested traffic conditions. Although PM₁₀ and PM_{2.5} have very localized effects, there is no U.S. EPA-approved methodology to evaluate microscale impacts of PM₁₀ and PM_{2.5}.

In addition to the criteria pollutants, hazardous air pollutants (HAPs) and greenhouse gasses (GHG) are air pollutants of concern.

4.4.1.1 Carbon Monoxide (CO)

CO is a colorless, odorless gas that is formed when carbon in fuel is not burned completely. It is a component of motor vehicle exhaust, which contributes about 56

percent of all CO emissions nationwide. Other nonroad engines and vehicles (such as construction equipment and boats) contribute about 22 percent of all CO emissions nationwide. Higher levels of CO generally occur in areas with heavy traffic congestion. In cities, 85 to 95 percent of all CO emissions may come from motor vehicle exhaust. Other sources of CO emissions include industrial processes (such as metals processing and chemical manufacturing), residential wood burning, and natural sources such as forest fires. Woodstoves, gas stoves, cigarette smoke, and unvented gas and kerosene space heaters are sources of CO indoors. The highest levels of CO in the outside air typically occur during the colder months of the year when inversion conditions are more frequent. The air pollution becomes trapped near the ground beneath a layer of warm air (U.S. EPA 2010a).

CO enters the bloodstream through the lungs by combining with hemoglobin, which normally supplies oxygen to the cells. However, CO combines with hemoglobin much more readily than oxygen does, resulting in a drastic reduction in the amount of oxygen available to the cells. Adverse health effects associated with exposure to CO concentrations include such symptoms as dizziness, headaches, and fatigue. CO exposure is especially harmful to individuals who suffer from cardiovascular and respiratory diseases (U.S. EPA 2010a).

The highest concentrations are generally associated with cold, stagnant weather conditions that occur during the winter. In contrast to problems caused by ozone, which tends to be a regional pollutant, CO problems tend to be localized. Overall, CO emissions are decreasing as a result of the Federal Motor Vehicle Control Program.

4.4.1.2 Ozone (O₃)

Ozone (O₃) is a photochemical oxidant, a substance whose oxygen combines chemically with another substance in the presence of sunlight. Ozone is the primary component of smog. Ozone is not directly emitted into the air but is formed through complex chemical reactions between precursor emissions of volatile organic compounds (VOC) and NO_x in the presence of sunlight. VOC emissions result primarily from incomplete combustion and the evaporation of chemical solvents and fuels. NO_x are a group of gaseous compounds of nitrogen and oxygen that results from the combustion of fuels. A highly reactive molecule, ozone readily combines with many different components of the atmosphere. Consequently, high levels of ozone tend to exist only while high VOC and NO_x levels are present to sustain the ozone formation process. Once the precursors have been depleted, ozone levels rapidly decline. Because these reactions occur on a regional scale, ozone is a regional pollutant.

Ozone located in the upper atmosphere (stratosphere) acts in a beneficial manner by shielding the earth from harmful ultraviolet radiation that is emitted by the sun. However, ozone located in the lower atmosphere (troposphere) is a major health and environmental concern. Meteorology and terrain play a major role in ozone formation. Generally, low wind speeds or stagnant air coupled with warm temperatures and clear skies provides the optimum conditions for ozone formation. As a result, summer is generally the peak ozone season. Because of the reaction time involved, peak ozone concentrations often occur far downwind of the precursor emissions. In general, ozone concentrations over or near urban and rural areas reflect an interplay of emissions of ozone precursors, transport, meteorology, and atmospheric chemistry (Godish 2004).

The adverse health effects associated with exposure to ozone pertain primarily to the respiratory system. Scientific evidence indicates that ambient levels of ozone affect not only sensitive receptors, such as asthmatics and children, but healthy adults as well. Exposure to ambient levels of ozone ranging from 0.10 to 0.40 parts per million (ppm) for 1 to 2 hours has been found to significantly alter lung functions by increasing respiratory rates and pulmonary resistance, decreasing tidal volumes (the amount of air inhaled and exhaled), and impairing respiratory mechanics. Ambient levels of ozone above 0.12 ppm are linked to symptomatic responses that include such symptoms as throat dryness, chest tightness, headache, and nausea. In addition to the above adverse health effects, evidence also exists relating ozone exposure to an increase in permeability of respiratory epithelia; such increased permeability leads to an increased response of the respiratory system to challenges, and a decrease in the immune system's ability to defend against infection (Godish 2004).

4.4.1.3 Nitrogen Dioxide (NO₂)

NO₂ is a brownish, highly reactive gas that is present in all urban environments. The major human-made sources of NO₂ are combustion devices, such as boilers, gas turbines, and mobile and stationary reciprocating internal combustion engines. Combustion devices emit primarily nitric oxide (NO), which reacts through oxidation in the atmosphere to form NO₂ (U.S. EPA 2010a). The combined emissions of NO and NO₂ are referred to as NO_x and reported as equivalent NO₂. Because NO₂ is formed and depleted by reactions associated with ozone, the NO₂ concentration in a particular geographical area may not be representative of the local NO_x emission sources. Inhalation is the most common route of exposure to NO₂. Because NO₂ has relatively low solubility in water, the principal site of toxicity is in the lower respiratory tract. The severity of the adverse health effects depends primarily on the concentration inhaled rather than the duration of exposure. An individual may experience a variety of acute symptoms, including coughing, difficulty with breathing, vomiting, headache, and eye irritation during or shortly after exposure. After a period of approximately 4 to 12 hours,

an exposed individual may experience chemical pneumonitis or pulmonary edema with breathing abnormalities, cough, cyanosis, chest pain, and rapid heartbeat. Severe, symptomatic NO₂ intoxication after acute exposure has been linked on occasion with prolonged respiratory impairment with such symptoms as chronic bronchitis and decreased lung functions (U.S. EPA 2010a).

4.4.1.4 Sulfur Dioxide (SO₂)

SO₂ is a combustion product, with the primary source being power plants and heavy industries that use coal or oil as fuel. SO₂ is also a product of diesel engine combustion. The health effects of SO₂ include lung disease and breathing problems for asthmatics. SO₂ in the atmosphere contributes to the formation of acid rain.

4.4.1.5 Lead (Pb)

Lead is a metal found naturally in the environment as well as in manufactured products. The major sources of lead emissions have historically been mobile and industrial sources. As a result of the phase-out of leaded gasoline, as discussed in detail below, metal processing is currently the primary source of lead emissions. The highest levels of lead in the air are generally found near lead smelters. Other stationary sources are waste incinerators, utilities, and lead-acid battery manufacturers. Twenty years ago, mobile sources were the main contributor to ambient lead concentrations in the air. In the early 1970s, U.S. EPA set national regulations to gradually reduce the lead content in gasoline. In 1975, unleaded gasoline was introduced for motor vehicles equipped with catalytic converters. U.S. EPA banned the use of leaded gasoline in highway vehicles in December 1995 (U.S. EPA 1996). As a result of U.S. EPA's regulatory efforts to remove Pb from gasoline, emissions of Pb from the transportation sector have declined dramatically (95 percent between 1980 and 1999), and levels of Pb in the air decreased by 94 percent between 1980 and 1999. Transportation sources, primarily airplanes, now contribute only 13 percent of Pb emissions. A National Health and Nutrition Examination Survey reported a 78 percent decrease in the levels of Pb in people's blood between 1976 and 1991. This dramatic decline can be attributed to the move from leaded to unleaded gasoline (U.S. EPA 2010a).

4.4.1.6 Particulate Matter (PM)

PM is a complex mixture of extremely small particles and liquid droplets. PM is made up of a number of components, including acids (such as nitrates and sulfates), organic chemicals, metals, and soil or dust particles. The size of PM is directly linked to the potential for causing health problems. The U.S. EPA is concerned about particles that are 10 micrometers in diameter or smaller because those are the particles that generally pass through the throat and nose and enter the lungs. Once inhaled, these particles can

affect the heart and lungs and cause serious health effects. Health studies have shown a significant association between exposure to PM and premature death. Other important effects include aggravation of respiratory and cardiovascular disease, lung disease, decreased lung function, asthma attacks, and certain cardiovascular problems such as heart attacks and irregular heartbeat (U.S. EPA 2010a). Individuals particularly sensitive to fine particle exposure include older adults, people with heart and lung disease, and children. The U.S. EPA groups PM into two categories, PM_{2.5} and PM₁₀, as described below.

Fine Particulate Matter (PM_{2.5}) Fine particles, such as those found in smoke and haze, are 2.5 micrometers in diameter and smaller (PM_{2.5}). Sources of fine particles include all types of combustion activities (motor vehicles, power plants, wood burning, etc.) and certain industrial processes. Control of PM_{2.5} is achieved primarily through the regulation of emission sources, such as U.S. EPA's Clean Air Interstate Rule and Clean Air Visibility Rule for stationary sources, the 2004 Clean Air Nonroad Diesel Rule, the Tier 2 Vehicle Emission Standards, and Gasoline Sulfur Program.

Inhalable Particulate Matter (PM₁₀) Inhalable particles (PM₁₀) include both fine and coarse dust particles; the fine particles are PM_{2.5}. Coarse particles, such as those found near roadways and dusty industries, are larger than 2.5 micrometers and smaller than 10 micrometers in diameter. Sources of coarse particles include crushing or grinding operations, and dust from paved or unpaved roads. The health effects of PM₁₀ are similar to PM_{2.5}. Control of PM₁₀ is achieved primarily through the control of dust at construction and industrial sites, the cleaning of paved roads, and the wetting or paving of frequently used unpaved roads. The criteria pollutants that are most important for this air quality impact analysis are those that can be traced principally to motor vehicles and to earth-moving activities. Federal Highway Administration (FHWA) and U.S. EPA released joint guidance for conducting qualitative analyses to evaluate microscale impacts of PM_{2.5} and PM₁₀ in March 2006 (FHWA 2006). FHWA and U.S. EPA are currently developing methods and modeling procedures for developing quantitative PM_{2.5} and PM₁₀ assessments; however, at the date of this report neither agency has issued quantitative guidance.

4.4.1.7 Hazardous Air Pollutants (HAPS)

In addition to the criteria air pollutants, U.S. EPA also regulates HAPs. Concentrations of HAPs are also used as indicators of ambient air quality conditions. A HAP is defined as an air pollutant that may cause or contribute to an increase in mortality or serious illness, or that may pose a hazard to human health. HAPs are usually present in minute quantities in the ambient air; however, their high toxicity or health risk may pose a threat to public health even at low concentrations. In general, for those HAPs that may cause

cancer, there is no concentration that does not present some risk. In other words, there is no threshold level below which adverse health impacts are not expected to occur. This contrasts with the criteria air pollutants for which acceptable levels of exposure can be determined and for which ambient standards have been established (see Table 2 in Section 4.3). Most HAPs originate from human-made sources, including on-road mobile sources, nonroad mobile sources (e.g., airplanes), area sources (e.g., dry cleaners), and stationary sources (e.g., factories or refineries).

Mobile Source Air Toxics (MSATs)

The CAA identified 188 compounds as HAPs. U.S. EPA has assessed this expansive list of toxics and identified a group of 21 as mobile source air toxics (MSATs). MSATs are compounds emitted from highway vehicles and nonroad equipment (e.g., off-road construction equipment). Some toxic compounds are present in fuel and are emitted to the air when the fuel evaporates or passes through the engine unburned. Other toxics are emitted from the incomplete combustion of fuels or as secondary combustion products. Metal air toxics also result from engine wear or from impurities in oil or gasoline. U.S. EPA also extracted a subset of this list of 21 compounds that it now labels as the seven priority MSATs. These are acrolein, benzene, 1,3-butadiene, diesel particulate matter (diesel PM) plus diesel PM organic gases, formaldehyde, naphthalene, and polycyclic organic matter (FHWA 2009). While these MSATs are considered the priority transportation toxics, U.S. EPA stresses that the lists are subject to change and may be adjusted in future rules (FHWA 2009). U.S. EPA has issued a number of regulations that will dramatically decrease MSATs through cleaner fuels and cleaner engines. According to an FHWA analysis, even if the number of vehicle miles traveled (VMT) increases by 64 percent, reductions of 57 to 87 percent in MSATs are projected from 2000 to 2020 (FHWA 2009).

Diesel Exhaust Particulate

In 1999, the California Air Resources Board (CARB) identified particulate emissions from diesel-fueled engines as a toxic air contaminant (TAC)¹. TAC is the term used in California similar to the federal HAP term. Once a substance is identified as a TAC, CARB is required by law to determine if there is a need for further control. This is referred to as risk management (CARB 2001). The process of further studies is ongoing at ARB, with committees meeting to analyze stationary and mobile diesel engine sources, as well as many other aspects of the problem. On September 28, 2000, CARB

¹ TACs, as defined in Section 39657 of the *California Health and Safety Code*, are chemicals that can cause adverse effects to human health or the environment, including substances that cause cancer, neurological, respiratory, and reproductive effects. The list of TACs also include HAPs as defined in subsection (b) of Section 112 of the federal Clean Air Act (42 U.S.C. Section 7412(b)).

approved the Proposed Diesel Risk Reduction Plan and the Proposed Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines. CARB programs in progress relating to truck emissions are included in the following paragraphs. There are other programs for risk reduction for off-road diesel engines.

In February 2001, U.S. EPA issued new rules requiring cleaner diesel fuels in 2006 and beyond. However, since 1993, California's regulations have required cleaner diesel fuel than the federal requirements. The 1993 federal regulations reduced particulate emissions by 5%, while the California regulations reduced particulate emissions by 25%.

The control of emissions from mobile sources is a statewide responsibility of CARB that has not been delegated to the local air districts. However, the San Diego Air Pollution Control District (APCD) is participating in the administration programs to reduce diesel emissions, principally by procurement and use of replacement vehicles powered by natural gas. Some air districts have issued preliminary project guidance for projects with large or concentrated numbers of trucks, such as warehouses and distribution facilities. No standards exist for quantitative impact analysis for diesel particulates.

4.4.1.8 Greenhouse Gases

Certain gases in Earth's atmosphere, classified as greenhouse gases (GHGs), play a critical role in determining Earth's surface temperature. Solar radiation enters Earth's atmosphere from space. A portion of the radiation is absorbed by Earth's surface, and a smaller portion of this radiation is reflected back toward space. This absorbed radiation is then emitted from Earth as low-frequency infrared radiation. The frequencies at which bodies emit radiation are proportional to temperature. Earth has a much lower temperature than the sun; therefore, Earth emits lower frequency radiation. Most solar radiation passes through GHGs; however, infrared radiation is absorbed by these gases. As a result, radiation that otherwise would have escaped back into space is instead "trapped," resulting in a warming of the atmosphere. This phenomenon, known as the greenhouse effect, is responsible for maintaining a habitable climate on Earth. Without the greenhouse effect, Earth would not be able to support life as we know it.

Prominent GHGs contributing to the greenhouse effect are carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons, chlorofluorocarbons, perfluorocarbons, and sulfur hexafluoride. Human-caused emissions of these GHGs in excess of natural ambient concentrations are responsible for intensifying the greenhouse effect and have led to a trend of unnatural warming of Earth's climate, known as global climate change or global warming. It is unlikely that global climate change of the past 50 years can be explained without contribution from human activities (Intergovernmental Panel on Climate Change (IPCC), 2007).

Emissions of GHGs contributing to global climate change are attributable in large part to human activities associated with the transportation, industrial/manufacturing, utility, residential, commercial, and agricultural sectors (CARB 2010a). In California, the transportation sector is the largest emitter of GHGs, followed by electricity generation. Emissions of CO₂ are byproducts of fossil fuel combustion. CH₄, a highly potent GHG, results from off-gassing (the release of chemicals from nonmetallic substances under ambient or greater pressure conditions) and is largely associated with agricultural practices and landfills. N₂O is also largely attributable to agricultural practices and soil management. CO₂ sinks, or reservoirs, include vegetation and the ocean, which absorb CO₂ through sequestration and dissolution, respectively, two of the most common processes of CO₂ sequestration.

4.4.2 REGULATORY SETTING

4.4.2.1 Federal Regulations

The CAA (42 USC §§ 7401-7671q) requires the adoption of National Ambient Air Quality Standards (NAAQS) to protect the public health and welfare from the effects of air pollution. The NAAQS are updated as needed. Current standards are set for SO₂, CO, NO₂, Ozone, PM₁₀, PM_{2.5}, and Pb, as shown in **Table 4-4**.

In addition to criteria pollutants, air quality regulations also focus on hazardous HAPs. U.S. EPA has identified 188 substances as HAPs. For those HAPs that may cause cancer, in general, there is no minimum concentration that does not present some risk, (i.e., there is no threshold level below which adverse health impacts may not be expected to occur). This contrasts with the criteria air pollutants, for which acceptable levels of exposure can be determined and ambient standards have been established (i.e., the NAAQS).

In the 1990 revision of the CAA, Congress recognized that Indian Tribes have the authority to implement air pollution control programs. U.S. EPA's Tribal Authority Rule gives Tribes the ability to develop air quality management programs, write rules to reduce air pollution and implement and enforce their rules in Indian Country. While state and local agencies are responsible for all CAA requirements, Tribes may develop and implement only those parts of the CAA that are appropriate for their lands. U.S. EPA provides technical assistance and resources to help Tribes build their program capacity. U.S. EPA also implements the CAA requirements in Indian country through programs such as the Federal Air Rules for Reservations, Title V permits, and air toxics rules.

4.4.2.2 State Regulations

The CARB is the state agency responsible for implementing the CAA in California. The CARB oversees the activities of local and regional air pollution control districts. These districts regulate industrial pollution sources. They also issue permits, develop local plans to attain healthy air quality and ensure that the industries in their area adhere to air quality mandates. CARB has established California Ambient Air Quality Standards (CAAQS) that are generally more restrictive than the NAAQS (**Table 4-4**).

4.4.2.4 Climate Change

U.S. EPA has not promulgated explicit guidance or methodology to conduct project-level GHG analysis. The CEQ issued revised draft guidance in December 2014 on how and when Federal agencies should consider the effects of GHG emissions and climate change in NEPA documents. Specifically, the guidance states that if a proposed action would cause emissions of less than 25,000 metric tons (MT) or more of CO₂ equivalent (CO_{2e}) GHG emissions on an annual basis, a quantitative analysis is not warranted unless such quantification is easily accomplished. CEQ does not propose this as an indicator of a threshold of significant effects, but rather as an indicator of a minimum level of GHG emissions that may warrant some description in the appropriate NEPA analysis for agency actions involving direct emissions of GHGs (CEQ 2014).

Assembly Bill (AB) 32, the California Global Warming Solutions Act of 2006, establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. This reduction would be accomplished through an enforceable statewide cap on GHG emissions that will be phased in starting in 2012.

4.4.3 EXISTING SETTING

4.4.3.1 Environmental Setting, Climate and Meteorology

The Gaming Facility project is located in the SDAB, which is coincident with San Diego County. The climate of San Diego County is characterized by warm, dry summers and mild, wet winters. One of the main determinants of the climatology is a semi-permanent high-pressure area (the Pacific High) in the eastern Pacific Ocean. In the summer, this pressure center is located well to the north, causing storm tracks to be directed north of California. This high-pressure cell maintains clear skies for much of the year. When the Pacific High moves southward during the winter, this pattern changes, and low-pressure storms are brought into the region, causing widespread precipitation. In San Diego County, the months of heaviest precipitation are November through April, averaging

**TABLE 4-4
NATIONAL AND CALIFORNIA AMBIENT AIR QUALITY STANDARDS**

Pollutant	Averaging Time	National ^a		California ^b
		Primary ^{c, d}	Secondary ^{c, e}	Concentration ^c
Ozone (O ₃)	1 hour	—	Same as primary standard	0.09 ppm (180 µg/m ³)
	8 hour	0.075 ppm (147 µg/m ³)		0.070 ppm (137 µg/m ³)
Respirable particulate matter (PM ₁₀)	24 hour	150 µg/m ³	Same as primary standard	50 µg/m ³
	Annual arithmetic mean	—		20 µg/m ³
Fine particulate matter (PM _{2.5})	24 hour	35 µg/m ³	Same as primary standard	No separate state standard
	Annual arithmetic mean	12 µg/m ³	15 µg/m ³	12 µg/m ³
Carbon monoxide (CO)	8 hour	9 ppm (10 mg/m ³)	None	9.0 ppm (10 mg/m ³)
	1 hour	35 ppm (40 mg/m ³)		20 ppm (23 mg/m ³)
	8 hour (Lake Tahoe)	—	—	6 ppm (7 mg/m ³)
Nitrogen dioxide (NO ₂)	Annual arithmetic mean	0.053 ppm (100 µg/m ³)	Same as primary standard	0.030 ppm (57 µg/m ³)
	1 hour	0.100 ppm	None	0.18 ppm (339 µg/m ³)
Sulfur dioxide (SO ₂)	24 hour	—	—	0.04 ppm (105 µg/m ³)
	3 hour	—	0.5 ppm (1,300 µg/m ³)	—
	1 hour	75 ppb	—	0.25 ppm (655 µg/m ³)
Lead ^f (Pb)	30-day average	—	—	1.5 µg/m ³
	Calendar quarter	1.5 µg/m ³	Same as primary standard	—
	Rolling 3-month average ^g	0.15 µg/m ³		—
Visibility-reducing particles	8 hour	No national standards		Extinction coefficient of 0.23 per kilometer —visibility of 10 miles or more (0.07 per kilometer (visibility of 30 miles for Lake Tahoe) because of particles when the relative humidity is less than 70%.
Sulfates	24 hour			25 µg/m ³
Hydrogen sulfide	1 hour			0.03 ppm (42 µg/m ³)
Vinyl chloride ^f	24 hour			0.01 ppm (26 µg/m ³)
Notes:				
mg/m ³ = milligrams per cubic meter; PM _{2.5} = fine particulate matter with an aerodynamic resistance diameter of 2.5 micrometers or less; PM ₁₀ = respirable particulate matter with an aerodynamic resistance diameter of 10 micrometers or less; ppm = parts per million; µg/m ³ = micrograms per cubic meter				
^a National standards (other than those for ozone and particulate matter and those based on annual averages or annual arithmetic mean) are not to be exceeded more than once a year. The ozone standard is attained when the fourth highest 8-hour concentration in a year, averaged over 3 years, is equal to or less than the standard. For PM ₁₀ , the 24-hour standard is attained when the expected number of days per calendar year with a 24-hour average concentration above 150 µg/m ³ is equal to or less than 1. For PM _{2.5} , the 24-hour standard is attained when 98% of the daily concentrations, averaged over 3 years, are equal to or less than the standard. Contact U.S. Environmental Protection Agency for further clarification and current federal policies.				
^b California standards for ozone, carbon monoxide (except Lake Tahoe), sulfur dioxide (1 and 24 hour), nitrogen dioxide, suspended particulate matter—PM ₁₀ , PM _{2.5} , and visibility-reducing particles—are values that are not to be exceeded. All others are not to be equalled or exceeded. California ambient air quality standards are listed in the Table of Standards in Section 70200 of Title 17 of the California Code of Regulations.				
^c Concentration expressed first in units in which it was promulgated. Equivalent units given in parentheses are based on a reference temperature of 25°C and a reference pressure of 760 torr. Most measurements of air quality are to be corrected to a reference temperature of 25°C and a reference pressure of 760 torr; ppm in this table refers to ppm by volume, or micromoles of pollutant per mole of gas.				
^d National primary standards: The levels of air quality necessary, with an adequate margin of safety, to protect the public health.				
^e National secondary standards: The levels of air quality necessary to protect the public welfare from any known or anticipated adverse effects of a pollutant.				
^f The California Air Resources Board has identified lead and vinyl chloride as “toxic air contaminants” with no threshold level of exposure for adverse health effects determined. These actions allow for the implementation of control measures at levels below the ambient concentrations specified for these pollutants.				
^g National lead standard, rolling 3-month average: final rule signed October 15, 2008.				
SOURCE: ARB 2015a, U.S. EPA 2015a				

about 9 to 14 inches annually. The mean temperature is 62.2°F, and the mean maximum and mean minimum temperatures are 75.7°F and 48.5°F, respectively (Ldn, 2014).

The Pacific High also influences the wind patterns of California. The predominant wind directions are westerly and west-southwesterly during all four seasons, and the average annual wind speed is approximately six miles per hour (Ldn, 2014).

A common atmospheric condition known as a temperature inversion affects air quality in San Diego. During an inversion, air temperatures get warmer rather than cooler with increasing height. Subsidence inversions occur during the warmer months (May through October) as descending air associated with the Pacific High comes into contact with cooler marine air. The boundary between the layers of air represents a temperature inversion that traps pollutants below it. The inversion layer is approximately 2,000 feet above mean sea level during the months of May through October. However, during the remaining months (November through April), the temperature inversion is approximately 3,000 feet above mean sea level. Inversion layers are important elements of local air quality because they inhibit the dispersion of pollutants, thus resulting in a temporary degradation of air quality (Ldn, 2014).

4.4.3.2 Regional and Local Air Quality

Specific geographic areas are classified as either “attainment” or “nonattainment” areas for each pollutant based on the comparison of measured data with federal and state standards. If an area is redesignated from nonattainment to attainment, the CAA requires a maintenance plan to demonstrate how the air quality standard will be maintained for at least 10 years. The Gaming Facility site is located in the SDAB, which currently meets the federal standards for all criteria pollutants except O₃ (U.S. EPA 2015b). The SDAB is a CO attainment-maintenance area following a 1998 redesignation as a CO attainment area. **Table 4-5** shows the federal attainment status for the SDAB.

On May 21, 2012, the U.S. Environmental Protection Agency (EPA) designated the San Diego Air Basin as a non-attainment area for the 2008 Eight-Hour Ozone standard and classified it as a marginal area. Effective July 5, 2013, U.S. EPA approved California's request to redesignate the San Diego County ozone nonattainment area to attainment for the 1997 8-hour ozone standard and approved their maintenance plan for continuing to attain the 1997 ozone standard for ten years beyond redesignation (SANDAG, 2015). Redesignation to attainment of the 1997 standard did not affect the region's Marginal nonattainment status for the 2008 standard.

The SDAB currently meets state standards for all criteria pollutants except O₃, PM₁₀, and PM_{2.5}. The SDAB is currently classified as a state O₃ nonattainment area and a state nonattainment area for PM_{2.5} and PM₁₀ (ARB 2014).

**TABLE 4-5
PROJECT AREA
FEDERAL ATTAINMENT STATUS**

CRITERIA POLLUTANT	FEDERAL ATTAINMENT STATUS
Ozone (O ₃)	Nonattainment – 2008 Marginal
Nitrogen Dioxide (NO ₂)	Attainment – Unclassified
Carbon Monoxide (CO)	Maintenance
Particulate Matter (PM ₁₀)	Attainment – Unclassified
Particulate Matter (PM _{2.5})	Attainment – Unclassified
SOURCE: US EPA, 2015b	

Ambient air pollutant concentrations in the SDAB are measured at 10 air quality monitoring stations operated by APCD. The monitoring station that represents the Reservation's area, climate, and topography in the SDAB is the El Cajon monitoring station, located at 1155 Redwood Ave., El Cajon, approximately 7 miles northwest of the Reservation. The station monitors NO₂, O₃, PM₁₀, and PM_{2.5}. **Table 4-6** summarizes the highest pollutant levels recorded at this station from 2012 through 2014, and the number of day the standards were exceeded, if any.

4.5 BIOLOGICAL RESOURCES

The Biological Resources discussion of the 2003 Final EIS addressed Regional Setting (3.5.1), Habitat Types within the Project Site (3.5.2), Federally Listed Species (3.5.3), Waters of the U.S. (3.5.4), and San Diego County Multi-Species Conservation Program (MSCP) (3.5.5). An update to each of these discussions, where needed, is presented below. Some information contained below is the same as presented in the 2003 Final EIS because the environmental circumstances remain unchanged.

4.5.1 REGIONAL SETTING

The Reservation is located within the Peninsular Ranges geographic subregion, which is contained within the Southwestern geographic subdivision of the larger California Floristic Province (Hickman 1993). The region is in climate Zone 21 – “Ocean-influenced southern California,” characterized by infrequent frost, with mild to hot, dry summers and mild, wet winters moderated by marine air influx (Hickman 1993; Brenzel 2001). The topography in the area is undulating and slopes generally toward the Willow Creek drainage, and ultimately, to the south towards Jamul Creek. The elevation ranges from approximately 800 feet to 1,000 feet above mean sea level.

**TABLE 4-6
AMBIENT AIR QUALITY SUMMARY – EL CAJON MONITORING STATION**

POLLUTANT STANDARDS	2012	2013	2014
Nitrogen Dioxide (NO₂)			
Maximum 1-hour concentration (ppm)	0.059	0.051	0.048
Annual average (ppm)	0.012	0.012	*
<i>Number of days standard exceeded</i>			
CAAQS 1-hour (20 ppm (23 mg/m ³))	0.0	0.0	0.0
Ozone (O₃)			
Maximum 1-hour concentration (ppm)	0.086	0.090	0.059
Maximum 8-hour concentration (ppm)	0.074	0.078	0.053
<i>Number of days standard exceeded</i>			
CAAQS 1-hour (>0.09 ppm)	0	0	0
CAAQS 8-hour (>0.070 ppm)	0	3	0
NAAQS 8-hour (2008) (>0.075 ppm)	0	1	0
Particulate Matter (PM₁₀)			
National maximum 24-hour concentration (µg/m ³)	48.0	41.0	48.0
National second highest 24-hour concentration (µg/m ³)	47.0	40.0	36.0
State maximum 24-hour concentration (µg/m ³)	47.2	41.1	47.0
State second highest 24-hour concentration (µg/m ³)	45.8	41.1	36.1
State annual average concentration (µg/m ³)	23.4	24.4	*
<i>Number of days standard exceeded</i>			
NAAQS 24-hour (>150 µg/m ³)	0	0	*
CAAQS 24-hour (>50 µg/m ³)	0	0	*
Particulate Matter (PM_{2.5})			
National maximum 24-hour concentration (µg/m ³)	37.7	23.1	38.1
National second highest 24-hour concentration (µg/m ³)	24.8	22.9	35.7
State maximum 24-hour concentration (µg/m ³)	37.7	23.1	43.4
State second highest 24-hour concentration (µg/m ³)	24.8	22.9	38.5
National annual average concentration (µg/m ³)	10.5	10.6	*
State annual average concentration (µg/m ³)	*	10.6	*
<i>Number of days standard exceeded</i>			
NAAQS 24-hour (>35 µg/m ³)	1	0	2
ppm = parts per million; µg/m ³ = micrograms per cubic meter: * = insufficient data			
SOURCE: ARB, 2015b			

The Reservation is currently under construction of the Gaming Facility. Previously, the Reservation had numerous residences, consisting of pre-fabricated structures. The far west portion of the Village parcel is owned by the Roman Catholic Church and contains a small cemetery and church.

The surrounding land uses are as follows: to the south, the Rancho Jamul Ecological Reserve and the Hollenbeck Canyon Wildlife Area, and private rangeland; to the north, the 4-acre parcel (former fire station), the 87-acre (used as cattle pasture), and residential subdivisions and the town of Jamul; to the east, Highway 94, the new fire station, private estates (Peaceful Valley Ranch Estates), and hayfields; and to the west, cattle pasture and private estates.

4.5.2 HABITAT TYPES WITHIN GAMING FACILITY PROJECT SITE

Most of the Reservation is developed with the Gaming Facility and associated wastewater treatment plant. Approximately 0.4 acres of coast live oak riparian habitat is located along Willow Creek. The three access road option areas contain the same four natural community/habitat types. **Table 4-7** summarizes the amount of each vegetation community by each access option.

**TABLE 4-7
VEGETATION COMMUNITIES IN EACH ACCESS ROAD OPTION AREA**

VEGETATION COMMUNITY TYPE	OPTION 1 (Improve Reservation Rd.) Acres	OPTION 2 (Improve Daisy Dr.) Acres	OPTION 3 (New Access from Melody Rd.) Acres
Non-native Grassland	0.95	0.79	4.68
Diegan Coastal Sage Scrub	0.05	0.00	0.00
Southern Coast Live Oak Riparian Forest	0.22	0.22	0.57
Ruderal / Developed (not a protected habitat type)	9.02	8.78	9.55
Totals	10.02	9.79	14.8
SOURCE: Natural Investigations, Inc., 2014; EDS, 2014			

Urbanized or developed areas that remain in the access road option project area consist of disturbed or converted natural habitat that is now either in a weedy and barren (ruderal) state, recently graded, or urbanized with pavement, landscaping, and structure and utility placement. Vegetation within this habitat type consists primarily of nonnative weedy or invasive ruderal species or ornamental plants lacking a consistent community structure. The disturbed and altered condition of these lands greatly reduces their habitat value and ability to sustain rare plants or diverse wildlife assemblages. However, common, disturbance-tolerant species did occur in these lands.

Non-native annual grassland was a plant community in the Gaming Facility project area and is currently in the access road option project area. These annual grasslands consist of open fields of non-native pasture grasses and weedy forbs. These annual grasslands have replaced native habitats of perennial bunchgrasses or coastal scrub. Grazing disturbances, rather than periodic wildfires, keep this plant community from undergoing successional changes to woodland or scrub. Plant species common in this community include European annual grasses (*Avena*, *Bromus*, *Hordeum*, *Festuca*), and forbs, such as turkey mullein (*Eremocarpus setigerus*), yellow star thistle (*Centaurea solstitialis*),

and black mustard (*Brassica nigra*). The conversion of native habitats to annual grasslands greatly reduces wildlife biodiversity and habitat value.

A coast live oak riparian corridor (Willow Creek) runs north-south through the Gaming Facility and access road option project area, but is severely degraded from cattle grazing. The dominant canopy tree is coast live oak (*Quercus agrifolia*); other characteristic riparian trees include canyon live oak and Engelmann oaks (*Quercus chrysolepis*, *Q. engelmannii*), willows (e.g. *Salix gooddingii* and *S. lasiolepis*), cottonwood, walnut, and non-native trees such as Eucalyptus. Understory vegetation is sparse, but includes elderberry, blackberry, and poison oak. This type of habitat is important to many wildlife species.

Remnants of Diegan coastal sage scrub habitat were present in one area on the southern boundary of the Gaming Facility and are present in the access road option project area. Remaining habitat consists largely of California sagebrush (*Artemisia californica*) and buckwheat (*Eriogonum*). Other common species in this habitat type are mule-fat (*Baccharis salicifolia*), tumbleweed (*Salsola*), white sage (*Salvia apiana*), and laurel-leaf sumac. Coastal scrub plant communities are adapted to wildfires and drought conditions, and provide habitat for many different types of wildlife. Cattle grazing has severely degraded the Diegan coastal sage scrub vegetation community and reduced the native shrub cover and allowed non-native weedy species to establish. Degraded scrub provides little habitat for wildlife. Granitic outcrops project area provide breaks in the scrub cover for reptiles to bask and birds to perch.

Two special-status communities were reported by the California Natural Diversity Database (CNDDB) (CDFW 2011) within a 5-mile radius of the Gaming Facility site: Southern Coast Live Oak Riparian Forest and Southern Interior Cypress Forest. One special-status community is present within the Gaming Facility project area: the Willow Creek riparian corridor contains Southern Coast Live Oak Riparian Forest (on the 87-acre parcel, the 10-acre parcel, and the Reservation). No critical habitat for any federally-listed species occurs within the Gaming Facility project area.

4.5.2.1 Habitat Connectivity and Wildlife Corridors

Wildlife movement corridors link remaining areas of functional wildlife habitat that are separated primarily by human developments, but natural barriers such as rugged terrain and abrupt changes in vegetation cover also exist. Wilderness and open lands have been fragmented by urbanization, which can disrupt migratory species and separate interbreeding populations. Corridors allow migratory movements and act as links between these separated populations. Within the region, several wildlife corridors exist: Jamul Creek drainage and the preserve areas (Rancho Jamul Ecological Reserve and

Hollenbeck Canyon Wildlife Area). Busy roadways (primarily SR-94) and their fences create barriers and regular sources of mortality. Culverts under roads and bridges, such as the bridge at Melody Road, allow some wildlife movement under busy roads; thus the Willow Creek riparian corridor within the Gaming Facility and access road option project area functions to a limited extent as a wildlife corridor, but the corridor terminates abruptly with the urbanization of the town of Jamul. No fishery resources exist in the Gaming Facility project area because all drainages flow only ephemerally or intermittently and are highly degraded.

4.5.3 PROTECTED WATER RESOURCES

4.5.3.1 Water Resources Under Federal Jurisdiction

A formal delineation of water features under federal jurisdiction (waters of the US) of the Reservation and surrounding parcels (the 87-acre parcel, the 4-acre parcel, the 10-acre parcel) and the SR-94 corridor was performed in summer 2011. This delineation was field verified by United States Corps of Engineers (USACE) in November 2011, and a preliminary jurisdictional determination was agreed upon by both USACE and JIV in 2013. Water features subject to USACE jurisdiction under the CWA in the Reservation vicinity consist of Willow Creek, its tributaries, and instream riverine marshes (**Figure 4-7**). Within the Reservation, only one water feature is present: Willow Creek. No wetlands, vernal pools, or other water features are present within the Reservation. Water features subject to USACE jurisdiction within the access road option project area include the Willow Creek channel and instream wetlands (Wetland A and B), and ephemeral tributaries to Willow Creek (Drainage B, Swales 2, 3, 4, 4B, and 5). The entire 4-acre Parcel has upland features and contains no water features and no waters of the US. All of the SR-94 Study Corridor has upland features and contains no water features and no waters of the U.S., except for small portions of Swale 4 and Swale 4B, which were given jurisdiction under the Preliminary Jurisdictional Determination. Elsewhere on the access option project area, swales, roadside ditches, and culverts are not subject to federal regulation. No vernal pools or other isolated wetlands were detected within the access option project area.

Willow Creek is an intermittent tributary of Jamul Creek, which spans approximately 269 feet within the Reservation and has an average channel width of 3 feet; this equates to an area of about 800 square feet (0.02 acre). One 36-inch corrugated metal pipe culvert conveys flows under Reservation Road. Within the access road option project area, the lower portions of Willow Creek flow seasonally from both surface runoff and the discharge of several springs. Wetlands A and B are riverine marshes located within the ordinary high water mark of Willow Creek that are completely within the 87-acre parcel and are severely degraded from use by cattle. Ordinary high water mark indicators for

this drainage include: shelving; drift lines; sediment deposits; destruction/absence of vegetation; bank erosion; and litter/debris packing. Where scouring did not remove vegetation, in-channel vegetation included: watercress (*Rorippa nasturtium-aquaticum*), curly dock (*Rumex crispus*), nutsedge (*Cyperus* sp.), Jimsonweed (*Datura stramonium*), tree tobacco (*Nicotiana* sp.), and various non-native annual grasses and weedy forbs. Where present, riparian canopy species included: Arroyo willow (*Salix lasiolepis*), coast live oak (*Quercus agrifolia*), Tree of Heaven (*Ailanthus altissima*), and pepper tree (*Schinus* sp.). The tributaries of Willow Creek (Drainage B, Swales 2, 3, 3B, 4, 4B, 5) are ephemeral channels that are deeply incised from unchecked erosion. These features transmit water only after rain events.

4.5.3.2 Water Resources Under State Jurisdiction

The Reservation is a federal Indian reservation that is not subject to California state laws. The access road option project area is within state jurisdiction. State jurisdiction is more broadly defined than federal jurisdiction. Under state law, the jurisdiction of the California Department of Fish and Wildlife (CDFW) includes Willow Creek and associated tributaries and wetlands, as well as associated riparian vegetation.

4.5.4 SPECIAL-STATUS SPECIES

Historical Records of Special-status Species' Occurrences

A list of special-status plant and animal species that historically occurred within the project area and vicinity was compiled based upon the following:

- Any previous and readily-available biological resource studies pertaining to the project area;
- Informal consultation with USFWS by generating an electronic Species List (available on the applicable Field Office website); and
- A spatial query (query of specified geographic area) of the CNDDDB and SanBIOS (San Diego County database).

The CNDDDB was queried and any reported occurrences of special-status species with historical occurrences within the Reservation and access option project area were plotted. Within a 5-mile buffer of the Reservation and access option project area, the CNDDDB reported numerous special-status species occurrence records (**Figure 4-8**). Although no records occur directly within the Reservation area, the CNDDDB reported two special-status species with historical occurrences within or very near the access option project area:

- *Ericameria palmeri* var. *palmeri* (Palmer's goldenbush). The CNDDDB record reads: "on a rock knoll southwest of the fire station near Peaceful Valley Ranch Road in Jamul; mapped as best guess by CNDDDB in vicinity of Campo Road (Hwy 94), south of intersection with Melody Road; note - 2001 Reiser Report is the only source for this site; a dozen shrubs observed, unknown date; needs fieldwork."
- *Polioptila californica californica* (coastal California Gnatcatcher). The CNDDDB record reads: "Just west of Saint Francis Xavier Cemetery, south of Jamul; habitat consists of coastal sage scrub, dominated by *Artemisia californica* and *Eriogonum fasciculatum*, on an east-facing slope; 2 adults observed on 8 Sep. 2001; report by Allen, Douglas (Pacific SW Biological Services). California Gnatcatcher (*Polioptila californica californica*) Presence/Absence Surveys for Jamul Rancheria Parcels, Jamul, San Diego County, California. 2001-10-02."

The County's SanBIOS database was also spatially queried and reported no special-status species with a historical occurrence within the Reservation and access option project area. The County's database reported no special-status species with a historical occurrence within the Gaming Facility project area. Two special-status species occurrences were reported by SanBIOS database on adjacent properties: *Masticophis flagellum* (coachwhip snake), Rancho Jamul, near SR-94; and *Myotis evotis* (Long-eared Myotis bat), 13993 Wanda Way, Jamul.

A federal species list was also generated from the USFWS website using the USGS 7.5-minute quadrangle in which the Reservation is located, plus the surrounding quadrangles. The resulting species list from all databases is presented in **Appendix 3**.

The special-status species identified in these databases were further assessed for their likelihood to occur within the Reservation and access option project area based upon previously documented occurrences, field surveys, their habitat requirements, and the quality and extent of any suitable habitat within the Access Option project area. Each species was ranked for its likelihood to occur within the Access Option project area.

The results of these analyses are summarized in **Appendix 3**.

The following plant species were ranked "moderate" or "high" in potential occurrence in the Study Area: San Diego sagewort (*Artemisia palmeri*); Otay tarplant (*Deinandra conjugens*); Palmer's goldenbush (*Ericameria palmeri* var. *palmeri*); Palmer's grapplinghook (*Harpagonella palmeri*); Ramona horkelia (*Horkelia truncata*); decumbent goldenbush (*Isocoma menziesii* var. *decumbens*); Gander's pitcher sage (*Lepechinia ganderi*); Robinson's peppergrass (*Lepidium virginicum* var. *robinsonii*); felt-leaved monardella (*Monardella hypoleuca lanata*); and Munz's sage (*Salvia munzii*).

The following animal species were ranked “moderate” or “high” in potential occurrence in the Study Area: Cooper's hawk (*Accipiter cooperii*); golden eagle (*Aquila chrysaetos*); orange-throated whiptail (*Aspidoscelis hyperythra*); coastal western whiptail (*Aspidoscelis tigris stejnegeri*); Dulzura pocket mouse (*Chaetodipus californicus femoralis*); Rosy boa (*Charina trivirgata*); northern red- diamond rattlesnake (*Crotalus ruber ruber*); yellow warbler (*Dendroica petechia brewsteri*); San Diego ringneck snake (*Diadophis punctatus similis*); southwestern willow flycatcher (*Empidonax traillii extimus*); Coronado skink (*Eumeces skiltonianus interparietalis*); prairie falcon (*Falco mexicanus*); San Diego black-tailed jackrabbit (*Lepus californicus bennettii*); San Diego desert woodrat (*Neotoma lepida intermedia*); coast [San Diego] horned lizard (*Phrynosoma coronatum*); Coronado Island skink (*Plestiodon skiltonianus interparietalis*); coastal California gnatcatcher (*Polioptila californica californica*); and least Bell's vireo (*Vireo bellii pusillus*).

Note, however, that these species are likely to occur only in the undisturbed and undeveloped portions of the Reservation and access option project area (i.e., riparian corridors and regenerating coastal scrub on hillsides). Most of the vegetation has been removed from the Reservation to allow for construction of the Gaming Facility.

Analyses of Likelihood of Occurrence of Listed Species / Special-status Species

No critical habitat for any federally-listed species occurs within the Reservation and access road option project area. Because most of the vegetation has been removed from the Reservation, the potential likelihood of special-status species occurrences is low.

Wildlife surveys conducted from 2011 to 2014 of the access road option project area did not detect any special-status animals. Botanical surveys conducted from 2001 through 2013 of the access road option project area detected only three rare plant occurrences (Mooney & Associates 2000; Pacific Southwest Biological Services 2000b; Natural Investigations 2006, 2007a, 2009, 2011a,b,c, 2013; Pacific Southwest Biological Services 2011a,b,c, 2013). All of these rare plant occurrences are located on the 87-acre parcel in the non-native grassland and Diegan coastal sage scrub habitats:

- One stand of Palmer's goldenbush. This plant is discussed further below.
- Four stands (approximately 16 square feet) of dwarf plantain (*Plantago erecta*). This species is not rare, but it is host to the federally-endangered Quino checkerspot butterfly. Impacts to this plant and the Quino checkerspot butterfly are discussed in Section 5.

- Two stands (approximately 8 square feet) of Spiny redberry (*Rhamnus crocea*). This species is not rare, but it is host to a candidate species for federal listing, Hermes copper butterfly (*Hermelycaena hermes*). Impacts to this plant and the Quino checkerspot butterfly are discussed in Section 5.

These rare plant occurrences are located entirely within the Option 3 (New Access from Melody Road) project area. The other access road option project areas do not contain any known special-status plant species.

Arroyo toad (*Anaxyrus californicus*), federally and state listed as endangered, has the following habitat requirements, as summarized by CDFW (2011a): “semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc.; rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.” The nearest occurrence in the CNDDDB is over 4 miles away. Arroyo toad has never been detected in the access road option project area in faunal surveys performed from 2001 to 2014. No suitable habitat exists within the access road option project area. One area near the access road option project area contain suitable habitat: the lower reaches of Willow Creek (within the Rancho Jamul Ecological Reserve). Critical habitat for Arroyo toad is found in the Sweetwater River corridor, but not present within the access road option project area.

The western yellow-billed cuckoo (*Coccyzus americanus*) is a candidate for federal listing. CDFW (2010a) describes its habitat requirements as, “riparian forest nester, along the broad, lower flood- bottoms of larger river systems; nests in riparian jungles of willow, often mixed with cottonwoods, w/ lower story of blackberry, nettles, or wild grape.” The nearest occurrence in the CNDDDB is over 6 miles away in the Sweetwater River corridor. The access road option project area does not contain suitable habitat for this species because the only riparian habitat is within smaller intermittent streams that lack the correct vegetation structure and composition. No western yellow-billed cuckoos were observed during field surveys.

Southwestern willow flycatcher (*Empidonax traillii extimus*) is a federally and state listed endangered species. USFWS describes the requisite habitat as, “For nesting, requires dense riparian habitats with microclimatic conditions dictated by the local surroundings. Saturated soils, standing water, or nearby streams, pools, or cienegas are a component of nesting habitat that also influences the microclimate and density of the vegetation component.” The access road option project area does not contain suitable habitat for the species because the only riparian habitat is within smaller intermittent streams that lack the correct vegetation structure and composition. No southwestern willow flycatchers were observed during field surveys.

Quino Checkerspot Butterfly is federally designated as an endangered species. The access road option project area is not included in the designated critical habitat of the Quino checkerspot butterfly. The Quino checkerspot butterfly occurs in the vicinity of the access road option project area and a monitored reference site is located on the Rancho Jamul Ecological Reserve “in the vicinity of the intersection of Otay Lakes Road and State Route 94 between 800-1,000 ft in elevation” (USFWS, <http://www.fws.gov/carlsbad/>). Monitored primary host plant populations in San Diego County consisted of dwarf plantain (*Plantago erecta*), woolly plantain (*Plantago patagonica*), and thread-leaved bird's beak (*Cordylanthus rigidus*). Five USFWS protocol-level surveys were conducted in 2000 by Mooney & Associates of the Jamul Indian Village, 87-acre, 10-acre, and 4-acre parcels: no Quino checkerspot butterflies were observed. No host plants have been detected within the access road option project area in botanical surveys conducted before 2009. One *Plantago erecta* stand was detected adjacent to the access road option project area during the field survey in 2009 on the 10-acre parcel, but no special-status butterflies have ever been detected. Forensic Entomology Services (2011a,b,c;) performed Quino checkerspot butterfly protocol surveys during the 2011 lepidopteran season on the Jamul Indian Village and the Access Option project area. No Quino checkerspot butterflies were detected in any of the study areas. Forensic Entomology Services (2011a,b,c) concluded that the Jamul Indian Village, the 4-acre parcel, and the SR-94 study corridor provided no suitable habitat for Quino checkerspot butterfly habitation and follow-up protocol surveys were not necessary. However, Forensic Entomology Services (2011c) did conclude that the Option 3 (New Access from Melody Road) project area contained patches of *Plantago erecta*; that many locations on the 87-acre parcel contained suitable habitat for Quino checkerspot butterfly, and that future protocol surveys would be needed if impacts occurred on the 87-acre parcel (only for construction of Access Option 3). Quino checkerspot butterfly protocol surveys were performed again in 2012 and 2013 in the access road option project area and on the Reservation (Forensic Entomology Services 2012a,b,c, 2013). These surveys did not detect Quino checkerspot butterfly and reached the same conclusions regarding suitable habitat.

Hermes copper butterfly is a candidate species for listing under the federal Endangered Species Act. The obligate (necessary) host plant is spiny redberry. Hermes Copper butterfly was not detected during protocol surveys for butterflies in 2011 in the obligate project area (Forensic Entomology Services 2011a,b,c). Spiny redberry was detected on the 87-acre parcel during botanical surveys in 2011, but not anywhere else in the Study Areas. Forensic Entomology Services also performed protocol surveys for Hermes copper butterfly during the survey season in 2012 and 2013 in the access road option project area (Forensic Entomology Services 2012d,e,f, 2013). These surveys did not detect Hermes Copper butterfly.

Coastal California gnatcatcher is federally designated as a threatened species. This subspecies is an obligate, permanent resident of coastal sage scrub in southern California; occasionally, other habitats such as riparian zones and grasslands are used outside of the breeding season. The CNDDDB reported a historical occurrence in 2011 very near the Jamul Indian Village, “Just west of Saint Francis Xavier Cemetery, south of Jamul.” USFWS protocol level surveys of the 87-acre, 10-acre, and 4-acre parcel were conducted for coastal California gnatcatcher by Pacific Southwest Biological Services during the 2000 and 2001 nesting seasons. These surveys did not detect this species within the survey area, but did spot two gnatcatchers on the Rancho Jamul Ecological Reserve just south of the Jamul Indian Village. Pacific Southwest Biological Services performed protocol surveys of the access road option project area in 2011 and in 2013; these surveys did not detect coastal California gnatcatcher and concluded that suitable habitat was lacking.

Least Bell's vireo is federally and state designated as an endangered species. Least Bell's vireo is a small, plain, insectivorous songbird that typically nests in willow thickets and other dense, shrubby vegetation communities found near water at elevations below 2,000 feet (CDFW (2011a). The Rancho Jamul Ecological Reserve was established, in part, to benefit least Bell's vireo. Some suitable habitat exists within the access road option project area within the Willow Creek riparian corridor, and the habitat improves southward, away from the Reservation. No least Bell's vireos were observed during reconnaissance-level and USFWS protocol-level bird surveys over the last decade in the access road option project area (Natural Investigations Co. 2006, 2007, 2009, 2011, 2012; Pacific Southwest Biological Services 2000a, 2001, 2011d,e,f, 2013).

Palmer's goldenbush is ranked rare (1B.1) by California Native Plant Society (CNPS), is designated a State Species of Concern, and is a Covered Species under the MSCP (designated as Group B species and “Narrow Endemic Plant Species within the MSCP Subarea”). The CNDDDB reported one historical occurrence in 2001 of Palmer's goldenbush very near the access road option project area “on a rock knoll southwest of the fire station near Peaceful Valley Ranch Road in Jamul.” One stand (“a single clone, about 2 meters in diameter”) of Palmer's goldenbush was found within the 87-acre parcel west of the riparian corridor in the overgrazed non-native grassland / Diegan coastal sage scrub habitat (Pacific Southwest Biological Services 2011c, 2013). Construction of Access Option 3 might impact this patch by the construction of the new access road. No Palmer's goldenbush was detected in the other access road option project area.

4.5.5 REGULATORY SETTING

4.5.5.1 Special-status Species Regulations

The USFWS and the National Marine Fisheries Service implement the FESA of 1973 (16 USC §1531 et seq.). Threatened and endangered species on the federal list (50 CFR §17.11, 17.12) are protected from “take” (direct or indirect harm), unless a FESA Section 10 Permit is granted or a FESA Section 7 Biological Opinion with incidental take provisions is rendered. Pursuant to the requirements of FESA, an agency reviewing a project within its jurisdiction must determine whether any federally listed species may be present in the area and determine whether the project will have a potentially significant impact upon such species. Under FESA, habitat loss is considered to be an impact to the species. In addition, the agency is required to determine whether the project is likely to jeopardize the continued existence of any species proposed to be listed under FESA or result in the destruction or adverse modification of critical habitat proposed to be designated for such species (16 USC §1536[3], [4]). Therefore, project-related impacts to these species or their habitats would be considered significant and would require mitigation. Species that are candidates for listing are not protected under FESA; however, USFWS advises that a candidate species could be elevated to listed status at any time, and therefore, applicants should regard these species with special consideration.

The California Endangered Species Act (CESA) of 1970 (California Fish and Game Code §2050 et seq., and CCR Title 14, §670.2, 670.51) prohibits “take” (defined as hunt, pursue, catch, capture, or kill) of species listed under CESA. A CESA permit must be obtained if a project will result in take of listed species, either during construction or over the life of the project. Section 2081 establishes an incidental take permit program for state-listed species. Under CESA, CDFW has the responsibility for maintaining a list of threatened and endangered species designated under state law (CFG Code 2070). CDFW also maintains lists of species of special concern, which serve as “watch lists.” Pursuant to requirements of CESA, an agency reviewing projects within its jurisdiction must determine whether any state-listed species may be present in the project area and determine whether the project will have a potentially significant impact upon such species. Project-related impacts to species on the CESA list would be considered significant and would require mitigation.

California Fish and Wildlife Code Sections 4700, 5050, and 5515 designates certain mammal, amphibian, and reptile species “fully protected,” making it unlawful to take, possess, or destroy these species except under issuance of a specific permit. The California Native Plant Protection Act of 1977 (CFG Code §1900 et seq.) requires CDFW to establish criteria for determining if a species or variety of native plant is endangered or

rare. Section 19131 of the code requires that landowners notify CDFW at least 10 days prior to initiating activities that will destroy a listed plant to allow the salvage of plant material.

Many bird species, especially those that are actively breeding, migratory, or of limited distribution, are protected under federal and state regulations. Under the Migratory Bird Treaty Act of 1918 (16 USC §703-711), migratory bird species and their nests and eggs that are on the federal list (50 CFR §10.13) are protected from injury or death, and project-related disturbances must be reduced or eliminated during the nesting cycle. California Fish and Game Code (§3503, 3503.5, and 3800) prohibits the possession, incidental take, or needless destruction of any bird nests or eggs, regardless of the species. Fish and Game Code §3511 designates certain bird species “fully protected,” making it unlawful to take, possess, or destroy these species except under issuance of a specific permit. The Bald and Golden Eagle Protection Act (16 USC §668) specifically protects bald and golden eagles from harm or trade in parts of these species.

California Environmental Quality Act (CEQA) (Public Resources Code §15380) defines a “rare” species in a broader sense than the definitions of threatened, endangered, or fully protected species. Under the CEQA definition, CDFW can request additional consideration of species not otherwise protected. CEQA requires that the impacts of a project upon environmental resources must be analyzed and assessed using criteria determined by the lead agency. Sensitive species that would qualify for listing but are not currently listed may be afforded protection under CEQA. The CEQA Guidelines (§15065) require that a substantial reduction in numbers of a rare or endangered species be considered a significant effect. CEQA Guidelines (§15380) provide for assessment of unlisted species as rare or endangered under CEQA if the species can be shown to meet the criteria for listing. Plant species on the CNPS Lists 1A, 1B, or 2 are typically considered rare under CEQA. California “Species of Special Concern” is a category conferred by CDFW on those species that are indicators of regional habitat changes or are considered potential future protected species. While they do not have statutory protection, Species of Special Concern are typically considered rare under CEQA and thereby warrant specific protection measures.

4.5.5.2 Protected Water Resources

Real property that contains water resources is subject to various federal and state regulations and activities occurring in these water resources may require permits, licenses, variances, or similar authorization from federal, state and local agencies, as described below.

The Federal Water Pollution Control Act Amendments of 1972 (as amended), commonly known as the Clean Water Act (CWA), established the basic structure for regulating discharges of pollutants into “waters of the United States.” Waters of the US includes essentially all surface waters, all interstate waters and their tributaries, all impoundments of these waters, and all wetlands adjacent to these waters. CWA Section 404 requires approval prior to dredging or discharging fill material into any waters of the US, especially wetlands. The permitting program is designed to minimize impacts to waters of the US, and when impacts cannot be avoided, requires compensatory mitigation. The USACE is responsible for administering Section 404 regulations. Substantial impacts to jurisdictional wetlands may require an Individual Permit. Small-scale projects may require only a Nationwide Permit, which typically has an expedited process compared to the Individual Permit process. Mitigation of wetland impacts may include on-site preservation, restoration, or enhancement and/or off-site restoration or enhancement. The characteristics of the restored or enhanced wetlands must be equal to or better than those of the affected wetlands to achieve no net loss of wetlands.

Under CWA Section 401, every applicant for a federal permit or license for any activity which may result in a discharge to a water body must obtain State Water Quality Certification that the proposed activity will comply with State water quality standards. The California State Water Resources Control Board is responsible for administering CWA Section 401 regulations. Any construction project that disturbs at least one acre of land requires enrollment in the State’s general permitting program under the National Pollutant Discharge Elimination System and implementation of a storm water pollution prevention plan.

California Fish and Game Code (§1601 - 1607) protects fishery resources by regulating “any activity that may substantially divert or obstruct the natural flow or substantially change the bed, channel, or bank of any river, stream, or lake.” CDFW requires notification prior to commencement, and issuance of a Lake or Streambed Alteration Agreement, if a project will result in the alteration or degradation of “waters of the State”. The limit of CDFW jurisdiction is subject to the judgment of the Department; currently, this jurisdiction is interpreted to be the “stream zone,” defined as “that portion of the stream channel that restricts lateral movement of water” and delineated at “the top of the bank or the outer edge of any riparian vegetation, whichever is more landward.” CDFW reviews the proposed actions and, if necessary, submits to the applicant a proposal for measures to protect affected fish and wildlife resources. The final proposal that is mutually agreed upon by the CDFW and the applicant is the Streambed Alteration Agreement. Projects that require a Streambed Alteration Agreement may also require a CWA 404 Section Permit and/or CWA Section 401 Water Quality Certification.

4.5.5.3 Local Laws, Ordinances, Regulations, and Standards

The Gaming Facility project area is located within an unincorporated portion of San Diego County. The Reservation is a federal Indian reservation that is not subject to County or State laws. Development of the access road option project area (except for Caltrans ROW) is guided by the Jamul/Dulzura Subregional Community Plan, which is the portion of the San Diego County General Plan that contains the County's goals, policies and maps for land use, conservation, recreation, and scenic highways for this subregion.

The County of San Diego Codes and Regulations protects natural resources under the following ordinances and policies (administered by the Department of Planning and Land Use):

- Clearing of Vegetation / Grading and Clearing Ordinance (No. 9547). No person may do any vegetation clearing or grading without a permit. No permit shall be issued, unless Habitat Loss Permit code has been complied with. Clearing up to 5 acres on a single-family residential lot, routine landscaping, maintenance, removal of dead trees, clearing for fire protection purposes within 100' of a dwelling, or incidental to repair or construction of a single-family dwelling outside the Multiple Species Conservation Plan (MSCP) Subarea is exempt. Within the MSCP, the Biological Mitigation Ordinance must be complied with (discussed in the next section). The Grading and Clearing Ordinance requires a permit for vegetation clearing (and a Habitat Loss Permit) for projects including 5 acres on a single-family residential lot.
- Coastal Sage Scrub Habitat Ordinance (No. 8365). This ordinance regulates development so as to avoid potential loss of Coastal Sage Scrub Habitat.
- Sensitive Habitats / Resource Protection Ordinance (Nos. 7968, 7739, 7685 and 7631). This ordinance protects steep-slope lands, wetlands, floodplains, and sensitive habitats (including mature riparian woodland). The Resource Protection Ordinance (RPO) limits impacts to several sensitive natural resources found throughout the County. These sensitive resources include coastal sage scrub. A Resource Protection Study is required for discretionary projects that may affect these sensitive natural resources. Impacts to sensitive habitat lands will be minimized and mitigated in accordance with the County guidelines and will provide equal or greater value to the affected species.
- Biological Mitigation Ordinance. This ordinance specifies mitigation standards for all projects requiring a discretionary permit. Projects should avoid sensitive biological resources (as defined in the Ordinance) to the maximum extent

practicable through siting the project in less sensitive areas, reducing road standards, and developing on steeper slopes (to avoid sensitive habitats). Projects should be designed so that they do not significantly contribute to edge effects or affect established movement corridors. Projects must mitigate potential effects to covered species and their habitats. These measures include identifying mitigation sites based on their value to covered species (based on data within the MSCP and Ordinance), avoiding known populations, avoiding special habitats (such as vernal pools), determining appropriate mitigation ratios, and grading restrictions.

In 1997, the County of San Diego adopted the MSCP South County Subarea Plan as part of a larger Natural Communities Conservation Program to provide long-term habitat conservation for a variety of sensitive habitats and species (County of San Diego, 1997). The Gaming Facility project area is located at the junction of 2 different planning segments: the Metropolitan-Lakeside-Jamul segment, and the South County Segment. The portions of the access road option project area that are east of SR-94, and areas north of Melody Road, are in the Metro-Lakeside-Jamul Segment. Some areas are designated as "Minor Amendment Areas" while others are designated "Take-Authorized Areas." The portions of the access road option project area that are west of SR-94, and areas south of Melody Road, are in the South County Segment. Some areas are designated as "Hardline preserve" or "Pre-approved mitigation areas" while others are designated "Take-Authorized Areas." MSCP designated areas are regulated under the authority of the County of San Diego in cooperation with the CDFW and the USFWS. Regulations associated with the different MSCP designations occurring within the Gaming Facility project area are summarized below and incorporated by reference in the San Diego County MSCP (County of San Diego, 1997).

- Metro-Lakeside-Jamul Segment. Within this segment, the take of covered species and their habitats is authorized for projects that meet the requirements of the Biological Mitigation Ordinance and conformance with the terms of the Subarea Plan. The Ordinance contains guidelines for the design and mitigation requirements for all projects subject to County discretionary authority. These guidelines include the following:
 - Project Design Criteria. Projects proposed within the segment will avoid sensitive biological resources (as defined in the Ordinance) to the maximum extent practicable through siting the project in less sensitive areas, reducing road standards, and developing on steeper slopes (to avoid sensitive habitats). Projects will also be designed so that they do not significantly contribute to edge effects or affect established movement corridors.

- Habitat and Species Based Mitigation. Several measures are identified to ensure that a project properly mitigates potential effects to both covered species and their habitats. These measures include identifying mitigation sites based on their value to covered species (based on data within the MSCP and Ordinance), avoiding known populations, avoiding special habitats (such as vernal pools), determining appropriate mitigation ratios, and grading restrictions.
- South County Segment. This segment is separated into two designations: areas where take is authorized, and Multiple Habitat Planning Areas (MHPA), also named preserve areas or hardline areas. Within take-authorized areas, projects must still conform to the Ordinance and the Subarea Plan. Land uses within the MHPA preserve areas are generally very limited. Some examples of land uses that may be authorized include hand clearing of vegetation for fuels management, habitat restoration, noxious weed control, scientific studies, and recreational trails.

Within the Metro-Lakeside-Jamul Segment, specific mitigation requirements for individual projects will be consistent with the mitigation requirements set forth in the MSCP, the County's Subarea Plan and the County's Biological Mitigation Ordinance. The mitigation ratios included in the Subarea Plan are identical to the mitigation ratios in the Biological Mitigation Ordinance.

4.6 CULTURAL AND PALEONTOLOGICAL RESOURCES

The Cultural and Paleontological Resources discussion of the 2003 Final EIS addressed Prehistory (3.6.1), Ethnography (3.6.2), Historical Context of the Project Area (3.6.3), Cultural Resources (3.6.4) and Paleontological Resources (3.6.5). An update to each of these discussions, where needed, is presented below. Some information contained below is the same as presented in the 2003 Final EIS because environmental circumstances remain unchanged.

4.6.1 PREHISTORY

Located 12 miles from the coast, the Reservation is situated within an area of southern California that was occupied by different prehistoric cultures dating to at least 12,000 years ago (Moratto 1984; Gallegos 2002; Byrd and Raab 2007). Prehistoric archaeological research for the region is divided into three broad periods: Paleoindian, Archaic, and Late Prehistoric. The Paleoindian period (12,000–8,500 years before present [B.P.]) is characterized by a diverse mixture of hunting and gathering by relatively mobile groups, who relied on marine resources near the coast. During the Archaic Period (8,500 B.C.–A.D. 500), milling tools were added to the toolkit and

subsistence practices were more diversified, focusing more on plants and small animals. Groups likely traveled seasonally between coastal and inland sites, and had a continued reliance on fish and shellfish along the coast. The Late Prehistoric (A.D. 500–historic contact) is characterized by an increase in social complexity with central villages, associated satellite camps and specialized activity sites distributed along the coast and inland river valleys, a change in mortuary practices, and an expansion of trade networks. There was an increased reliance on acorns and other nuts at upland bedrock milling station seasonal camps. Artifacts associated with this period include the bow and arrow, mortars and pestles, ceramics, ornaments, and rock art.

The characteristics of the Late Prehistoric period are similar to the culture of the Yuman-speaking Native American group occupying this region at historic contact (Kroeber 1925; Luomala 1978). The Kumeyaay inhabited most of today's San Diego and Imperial Counties and portions of adjoining northern Baja California. The Tipai, a geographic division of the Kumeyaay, occupied the Jamul region, west to San Diego, and south into Baja California past Ensenada. Their diet depended on a variety of natural resources including large and small game, fish, shellfish, waterfowl, and seasonally available plant foods, some of which like the acorn were collected in the fall and then stored in granaries before processing with bedrock or portable mortars and pestles. In terms of seasonal resources, the Sweetwater River and Otay River/Jamul Creek drainage systems west, south and east of the Reservation would have been productive environments during prehistoric and ethnohistoric times. Ethnographic Tipai established villages along these waterways, and archaeological sites have been identified along their banks.

4.6.2 ETHNOGRAPHY

Most of today's San Diego and Imperial Counties was populated with Yuman-speaking peoples, collectively referred to today as the Kumeyaay, at the time of European contact. This diverse geographic Native American group, who were called the Diegueño by the Spanish occupied the Pacific coast region from central San Diego County southward into the Baja California region past Ensenada, extending eastward into the Yuha and Anza-Borrego Deserts to the Sand Hills (Kroeber 1925; Luomala 1978). Their language is a member of the California–Delta Yuman division of the Yuman–Cochimi language family (Mithun 2001:304, 577). 'Iipay, Kumeyaay, and Tiipay are the three main dialects of the Diegueño/Kumeyaay language. The first and third terms are from the word meaning “people.”

Many local groups have currently banded together as the Kumeyaay Nation or Kumeyaay-Diegueño Nation (Kumeyaay.com 2013b). Preference for the name Kumeyaay was established over 30 years ago (e.g., Hedges 1975:77). In accord with

this preference, Kumeyaay is used here to refer to general characteristics found throughout all three geographic divisions.

Bands, the basic political unit among the Kumeyaay, generally controlled 10 to 30 miles along a drainage system (Shipek 1982:297). Bands were generally composed of 5 to 15 kinship groups (sib), some of which were divided among more than one band (Kroeber 1925:719; Shipek 1987:8). Within Kumeyaay territory were approximately 50 to 75 named kinship groups. A chief or *kwaaypaay* lived in the central village of each band and was responsible for internal and external band affairs. The chief gave advice, resolved disputes, and directed ceremonies. The position was typically inherited by the eldest son, with the approval of neighboring *kwaaypaay* (Shipek 1982:298). Generally, each band also had an assistant chief, and ceremonial singers and dancers.

After California officially became part of the United States in 1848, several Kumeyaay leaders signed the statewide 1852 treaty, but it was never ratified by Congress. After the mid-1870s, several reservations were formed from Kumeyaay lands in the Cuyamaca and Palomar Mountains and nearby valleys.

As of 2003, there were more than 2,570 enrolled members on 10 of the Kumeyaay reservations (CIAP 2003). A small band of Tipai had settled at least 65 years ago on six acres east of the community of Jamul (Kumeyaay.com 2013a). JIV was declared a reservation in 1981 (CIAP 2003:106). In 2015, JIV has 53 people enrolled members.

4.6.3 HISTORICAL CONTEXT OF THE RESERVATION

Early historic land use in the vicinity of the Reservation included establishment of the first Franciscan mission and the San Diego Presidio in Tipai territory in 1769, transportation routes, and Mexican land grants in the early 1800s. A portion of SR-94 and JIV lie within the northernmost extent of Rancho Jamul. Situated between Jamul and Dulzura, the rancho was provisionally granted in 1831 and regranted in 1845 to Pío Pico, who was the last Mexican Governor of California (Gudde 2004). It was sold several times in the late 1800s, and was part of the Jamul Portland Cement Manufacturing Company between 1889 and 1892 (Brackett 1960). During this same period, stage lines connecting to San Diego operated roughly along today's SR-94. In 1915, Rancho Jamul was purchased for use as a Wild West motion picture backdrop. By 1943, Campo Road (today's SR-94) connected the communities of Jamul, Indian Springs, and North Jamul. Settled by a small band of Tipai over 65 years ago, JIV was declared a reservation in 1981.

4.6.4 CULTURAL RESOURCES WITHIN GAMING FACILITY PROJECT SITE

A literature search by the South Coastal Information Center (SCIC) at San Diego State University in July 2009, a Sacred Lands file search by the Native American Heritage Commission (NAHC) and related communication with local Native American groups and individuals in 2009 and 2010, and pedestrian surveys in June 2010 and August 2011, involving transect spacing no greater than 15 meters apart, were conducted for the project. The NAHC August 2009 response stated their search does indicate the presence of Native American cultural resources within a one-half-mile radius of the project area of potential effects (APE). Of the letters and follow-up telephone calls made in June 2010 to the 14 tribes, groups or individuals on the contact list provided by the NAHC, three responses were received. Kenneth Meza, immediate past Chairperson of the Jamul Indian Village stated the tribe has no issues regarding the project. The response from the Barona Group of Capitan Grande was that the group had no concerns regarding the project. The Secretary for the Kumeyaay Cultural Heritage Preservation stated no issues had been raised by the tribe regarding the proposed Gaming Facility project. The SCIC records search indicated that portions of 23 cultural resources studies have been previously conducted within a one-half-mile radius of the Reservation, with an additional four studies including the Reservation. A total of 41 prehistoric and historic-era resources have been recorded within a one-half-mile radius but outside the Reservation. These include bedrock milling features, lithic scatters, shell scatters, rock cairns, pottery sherds, historic-era debris, and historic-era drainage ditches. Of these known cultural resources outside the Reservation, seven archaeological sites are mapped adjacent to the 4-acre parcel and areas potentially affected by the access road options. The potential for access options and traffic mitigation to affect cultural resources is addressed in **Section 7** Indirect Effects. Of the seven resources, two sites (CA-SDI-11050 and CA-SDI-7966/11410) have been determined eligible for National Register of Historic Places (NRHP) inclusion and thus qualify as historic properties/historical resources. These two sites include prehistoric bedrock milling, lithics, midden and possible village, and are located adjacent to the Reservation. Of the remaining five sites, two have been recommended not eligible for NRHP listing, and two have been destroyed and are thus ineligible. The last of the five sites (CA-SDI-14954) is located on the 4-acre parcel. This site was investigated in 2014; a series of 17 shovel test pits and one 1x1 meter test unit were placed within a 91x61 meter area. The testing revealed a light, subsurface lithic deposit. Based on the lack of integrity, the results of the subsurface testing, and the narrow range of artifacts recovered from the site, CA-SDI-14954 was determined to be ineligible for NHRP listing by the State Historic Preservation Officer (SHPO).

No built environment resources have been recorded within the Reservation and no cultural resources were identified within the Reservation during the pedestrian surveys in

2010 and 2011. Six archaeological sites (CA-SDI-7683, CA-SDI-7684, CA-SDI-7685, CA-SDI-7686, CA-SDI-7687, and CA-SDI -7688) previously recorded within the Reservation are not considered eligible for NRHP inclusion and have no potential to be impacted by the Gaming Facility project since each has been disturbed, removed or destroyed by natural or human agencies during the three decades since initial recordation in 1979.

4.6.5 REGULATORY FRAMEWORK

Cultural resources include prehistoric, ethnohistoric, or historic-era (>50 years old) archaeological artifacts, features and sites, districts, buildings, structures and objects that are protected under federal and state regulations and policies, including the National Historic Preservation Act of 1966 (NHPA), the Archaeological Resources Protection Act of 1979 (ARPA), NEPA, CEQA, and Section 5097.5 of the California Public Resources Code (PRC). Cultural resources that are judged to meet the criteria for listing in the NRHP are considered to be significant historic properties and, as such, must be considered during planning for federal undertakings under Section 106 of the NHPA (36 CFR 800). Historic properties listed in the NRHP are automatically listed in the CRHR maintained by the State Office of Historic Preservation. Both registers may include districts, sites, buildings, structures and objects with local, regional, state or national significance, although the CRHR may also include historical resources not listed in the NRHP.

Federal agencies are also required to consider the effects of their actions on items, resources, and locations of religious significance to Native Americans, as specified in the American Indian Religious Freedom Act (AIRFA), Executive Order (EO) 13007: Indian Sacred Sites, and EO 13287: Preserve America. On federal lands, including Native American Trust lands, Native American graves and burial grounds, including human remains, sacred and funerary objects, and objects of cultural patrimony, are protected under the Native American Graves Protection and Repatriation Act of 1990 (NAGPRA).

4.6.6 PALEONTOLOGICAL RESOURCES

Paleontological resources are the traces or remains of prehistoric plants and animals. Such remains often appear as fossilized or petrified skeletal matter, imprints or endocasts, and reside in sedimentary rock layers. Paleontological resources are protected by several federal and state regulations and policies, including the Antiquities Act of 1906, NEPA, CEQA, and PRC §5097.5.

The presence of paleontological resources at any particular site is influenced by geological composition resulting from formation processes occurring over long periods of time. Fossils typically reside in sedimentary layers, and may or may not become

mineralized dependent upon the mineral composition within their depositional environment.

A search of the University of California Museum of Paleontology (UCMP) database indicates more than 1,700 fossil localities occur within San Diego County, ranging in age from the Late Cretaceous (99–65 million years ago) to the Pleistocene (1.8–0.1 million years ago) (UCMP 2011). The localities, many of which are along the coast, contain mostly invertebrate fossils.

No significant paleontological fossils have been produced in the Gaming Facility project area or in the vicinity (UCMP 2011). The Gaming Facility project area is underlain by igneous Mesozoic granitic rocks (Strand 1962). Since granitic rocks are plutonic in origin, this geologic unit is determined to have no potential for paleontological resources.

The potential for off-reservation traffic mitigation to affect paleontological resources is addressed in Section 6.2.4.

4.7 SOCIOECONOMIC CONDITIONS

The Socioeconomic Conditions discussion of the 2003 Final EIS addressed Socioeconomic Characteristics of San Diego County (3.7.1), Socioeconomic Characteristics of JIV (3.7.2), Community Infrastructure (3.7.3), and Tribal Attitudes, Expectations, Lifestyle and Culture (3.7.4). An update to each of these discussions, where needed, is presented below. It may be that some information contained below is the same as presented in the 2003 Final EIS because environmental circumstances remain unchanged.

4.7.1 SOCIOECONOMIC CHARACTERISTICS OF SAN DIEGO COUNTY

4.7.1.1 Population and Housing

The Reservation is located in the unincorporated portion of southwestern San Diego County. The site is approximately 4.5 miles south of the northern county line and approximately 1 mile south of the community of Jamul. San Diego County has grown over 25.7% in population from 1990 to 2012 (California, 2012a). During this period, the County grew from 2,498,016 residents to an estimated 3,140,069 residents (**Table 4-8**). Looking at the 2000 to 2012 time period, the population within the sub-regional area of Jamul grew 92.4% compared to 11% for the County. The growth rate for the sub-regional area of Jamul is expected to drop off to 1.2% for the period 2012 to 2020, compared to 7.9% for the County over the same period.

There are currently an estimated 1,165,818 housing units currently in San Diego County, while the sub-regional area of Jamul has approximately 5,181 units (0.44% of County total) (**Table 4-9**). The housing within San Diego County represented approximately 8.5% of all housing units in the State of California as of 2010. San Diego County saw its number of housing units grow by 11.7% from 2000 to 2012, while the sub-regional area of Jamul's housing stock grew by 28.8% during the same period.

**TABLE 4-8
SAN DIEGO COUNTY AND JAMUL SUB-REGION POPULATION**

Location	2000	2010	Current	2020	% Change 2000-2012	Est % Change 2012-2020
San Diego County	2,828,374	3,095,313	3,140,069	3,391,010	11.0%	7.9%
Jamul	9,398	12,258	18,079	18,289	92.4%	1.2%
SOURCE: California, 2012; U.S. Commerce, 2012; SANDAG, 2012a						

**TABLE 4-9
HOUSING UNIT ESTIMATES**

Location	2000 Units	2000 Vacancy Rate	2010 Units	2010 Vac. Rate	Current Units	Current Vac. Rate	% Change 2000-2012
San Diego County	1,043,606	4.4%	1,164,786	4.4%	1,165,818	5.4%	11.7%
Jamul	4,023	5.0%	5,065	3.4%	5,181	1.7%	28.8%
SOURCE: SANDAG, 2012a							

4.7.1.2 Employment and Income

As of 2010 (year that most recent data is available), there were approximately 2,390,470 people in the County that were 16 years and older. Of that number, approximately 65.9% or 1,575,742 were in the labor force (U.S. Census Bureau, 2012). The civilian labor force accounted for approximately 95% of the labor force, while the armed forces accounted for the remaining 5% of the labor force. Approximately 34.1% of those individuals over 16 years of age were not in the labor force as of 2010. San Diego County had a 7.8% unemployment rate as of 2010. Higher unemployment rates have been recorded since the U.S. Census data was published in 2010. The rate was 9.7% in April 2011, but came down to 8.7% in April 2012; however, both numbers are well higher than the recorded 2010 data.

Approximately 39.5% of the civilian work force in the County are employed in the management, professional, and related occupations. Sales and office jobs comes in

second with approximately 25.3% of the civilian work force, while service jobs employ approximately 18.1% of the civilian work force. Private wage and salary workers make up approximately 76.2% of the civilian employment force, while government workers make up 15.4%. Only 8.2% of workers are self-employed workers in the County.

The largest percent of earners in the county (approximately 17.7%) earn between \$50,000 to \$75,000 per year. Only 4.4% earn less than \$10,000 per year, while approximately 6.2% make more than \$200,000 per year. The median household income is estimated to be \$63,069, while the mean household income is estimated to be \$83,941 (U.S. Census Bureau, 2012). Approximately 23% of the population receives social security, while approximately 17% of the population receives retirement income.

The latest employment data provided by SANDAG for the Jamul sub-regional area is for 2009. Of the approximately 4,626 occupied households in 2009, the median household income is \$74,790. Approximately 7.5% of the households make less than \$15,000 (smallest unit of data provided) per year. Sixty-four percent of the households in the Jamul Sub-Regional area make less than \$100,000 per year, while approximately 6.8% make more than \$200,000 per year (SANDAG, 2012b).

4.7.2 SOCIOECONOMIC CHARACTERISTICS OF THE JAMUL INDIAN VILLAGE

JIV is a federally recognized sovereign Indian Tribe that currently has 53 tribal members. The tribal unemployment rate is 51 percent.

4.8 RESOURCE USE PATTERNS

The Resources Use Patterns discussion of the 2003 Final EIS addressed Transportation (3.8.1), Land Use (3.8.2), Agriculture (3.8.3), and Other Resources Uses (3.8.4). An update to each of these discussions, where needed, is presented below. It may be that some information contained below is the same as presented in the 2003 Final EIS because environmental circumstances remain unchanged.

4.8.1 TRANSPORTATION

4.8.1.1 Road Network

The following provides a description of the existing street system within the vicinity of the Reservation.

SR-94 begins near downtown San Diego as an eight-lane, access-controlled freeway. As it proceeds to the east, it narrows to a four-lane facility, with the freeway terminating at Avocado Boulevard. SR-94 then becomes a four-lane major roadway with signalized at-

grade intersections between Avocado Boulevard and Jamacha Boulevard. In the relatively short section between Jamacha Boulevard and Jamacha Road, it is a six-lane road. South and east of Jamacha Road, it is a four-lane facility, which then transitions to a two-lane cross section. In the vicinity of the Reservation, it is a two-lane, undivided, conventional highway that is also known as Campo Road. Bike Lanes are currently not provided and curbside parking is prohibited along both sides of the roadway. Bus stops are provided intermittently along the roadway. SR-94 is part of the County of San Diego Bicycle Network System. SR-94 is approximately 26 feet wide with shoulders generally varying from 2 to 8 feet in the Reservation area. The posted speed limit is 55 mph. A two-way left-turn lane striping is provided along sections of the roadway where driveway access is denser. The segment between Cougar Canyon Road and Steele Canyon Road provides a two-way left-turn lane. SR-94 is classified as a prime arterial north of Melody Road and a major road south of Melody Road on the County of San Diego Circulation Element.

Jamacha Boulevard is constructed as a six-lane prime arterial south of SR-94. The posted speed limit along this corridor is 45 mph. This roadway segment is built to its ultimate classification.

Jamacha Road is constructed as a six-lane prime arterial east of SR-94. The posted speed limit along this corridor is 45 mph. This roadway segment is built to its ultimate classification.

Steele Canyon Road is currently constructed as a two lane undivided roadway, providing one travel lane in the north direction and one travel lane in the south direction. Steele Canyon Road is signalized at SR-94, Jamul Drive and Willow Glen Drive. Steele Canyon Road has a roadway width of 45 feet with no shoulders provided. The posted speed limit on Steele Canyon Road is 45 mph. Steele Canyon Road is classified as a collector road in the County of San Diego Circulation Element. Between Jamul Drive and Heatherwood, a two-way left-turn lane is provided to facilitate access to adjacent properties along both sides of the road.

Lyons Valley Road is a two-lane undivided roadway. Bike lanes are provided and curbside parking is prohibited. Lyons Valley Road has a current roadway width of 35 feet with no shoulders provided. The speed limit is posted at 45 mph.

Jefferson Road is a two-lane undivided roadway with a posted speed limit of 40 mph. Currently, Jefferson Road has a roadway width of 30 feet with no shoulders provided. Jefferson Road is an unclassified roadway within the County of San Diego.

Melody Road is currently constructed as a two-lane undivided roadway providing one lane of travel per direction. No bike lanes or bus stops are provided and curbside parking

is prohibited. No speed limit was posted, so the prima facie speed limit is 25 mph. Currently, Melody Road has a roadway width of 40 feet with no shoulders provided.

Jamul Drive is currently constructed as a two-lane undivided roadway providing one lane of travel per direction. Bike lanes are provided and curbside parking is prohibited. Left-turn lanes are provided intermittently within the corridor to facilitate access to existing driveways and roads along both sides for the roadway. The posted speed limit along Jamul Drive is 45 mph.

Willow Glen Drive is currently constructed as a two-lane undivided roadway providing one lane of travel per direction. Between Steele Canyon Road and the Cottonwood Golf Course, two westbound lanes, and an eastbound lane are provided. Bike lanes are present along the corridor. The posted speed limit along Willow Glen Drive is 45 mph.

Most recently, the Tribe has filed a fee-to-trust application with the BIA to take into federal trust the 4-acre parcel located north of the Reservation and immediately west of SR-94. Planned uses on this 4-acre parcel include an improved Daisy Drive connecting the Reservation with SR-94. A new fire station may also be constructed on the 4-acre parcel in the future.

4.8.1.2 Study Intersections

The study area analyzed was defined in coordination with Caltrans District 11 staff. All of the intersections along SR-94 between Via Mercado and Otay Lakes Road in Caltrans' jurisdiction were included. In addition, all intersections in the County of San Diego's jurisdiction where the Gaming Facility project would generate 25 or more directional peak-hour trips were included.

Table 4-10 lists all of the intersections included in the study area. As shown in **Table 4-10**, ten study intersections are signalized and nine study intersections are unsignalized. **Figure 4-9** displays the location of the study intersections. **Figure 4-10** shows the existing geometrics for the intersections within the study area.

4.8.1.3 Study Roadway Segments

The study area was determined in coordination with Caltrans District 11 staff and included all of the significant roadway segments providing access to the Reservation. In addition, County of San Diego's roadway segments were included in the study based on the County of San Diego's *Report Format & Content Requirements – Transportation and Traffic*, dated August 24, 2011. The roadway segments included in the analysis are:

- Sweetwater Springs Boulevard between Jamacha Boulevard and Austin Drive;

- Jamacha Boulevard between SR-94 and Sweetwater Springs Boulevard;
- Jamacha Road between SR-94 and Fury Lane;
- Jamacha Road between Willow Glen Drive and Brabham Street;
- Steele Canyon Road between SR-94 and Jamul Drive;
- Steele Canyon Road between Jamul Drive and Willow Glen Drive;
- Jamul Drive between Steele Canyon Road and Lyons Valley Road;
- Willow Glen Drive between Jamacha Road and Steele Canyon Road;
- Willow Glen Drive between Steele Canyon Road and Hillsdale Road;

**TABLE 4-10
STUDY INTERSECTIONS**

INTERSECTION		TRAFFIC CONTROL ¹
1.	SR-94 and Via Mercado	Signal
2.	SR-94 and Jamacha Blvd	Signal
3.	SR-94 and Jamacha Rd	Signal
4.	SR-94 and Cougar Canyon Rd	Signal
5.	SR-94 and Steele Canyon Rd	Signal
6.	SR-94 and Lyons Valley Rd	TWSC
7.	SR-94 and Jefferson Rd	Signal
8.	SR-94 & Maxfield Rd.	OWSC
9.	SR-94 and Melody Rd	TWSC
10.	SR-94 and Reservation Road	OWSC
11.	SR-94 and Honey Springs Rd	OWSC
12.	SR-94 and Otay Lakes Rd	OWSC
13.	Jamacha Blvd. & Sweetwater Springs Blvd	Signal
14.	Willow Glen Dr. & Jamacha Rd.	Signal
15.	Steele Canyon Rd. & Willow Glen Dr.	Signal
16.	Steele Canyon Rd & Jamul Dr.	Signal
17.	Lyons Valley Rd & Jamul Dr	OWSC
18.	Jefferson Rd. & Lyons Valley Rd.	OWSC
19.	Melody Rd. & Proctor Valley Rd.	OWSC
¹ / Signal = Traffic signal; OWSC = One -Way Stopped Control; TWSC = Two-Way Stopped Control SOURCE: Kimley Horn, 2012		

- Jamul Drive between Steele Canyon Road and Lyons Valley Road;
- Willow Glen Drive between Jamacha Road and Steele Canyon Road;
- Willow Glen Drive between Steele Canyon Road and Hillsdale Road;
- Lyons Valley Road between SR-94 and Jefferson Road;
- Lyons Valley Road between Jefferson Road and Jamul Drive;
- Lyons Valley Road between Jamul Drive and Myrtle Street;
- Jefferson Road between SR-94 and Lyons Valley Road;
- Melody Road between SR-94 and Proctor Valley Road;
- Proctor Valley Road between Melody Road and Pioneer Way;
- Honey Springs Road between SR-94 and Mother Grundy Truck Trail; and
- Otay Lakes Road between SR-94 and Otay Mountain Truck Trail.

4.8.1.4 Methodology

Analysis Process

The analysis process includes determining the operations at the study intersections for the weekday a.m. and p.m. peak periods. The peak hour represents the hour timeframe during the traffic counts with the highest volumes in the 7 to 9 am and 4 to 6 pm periods. Because the Gaming Facility project would generate higher peak-hour traffic during the Friday and Saturday afternoons, the Friday p.m. peak-hour and the Saturday p.m. peak-hour were also evaluated. In addition, the operations along the roadway segments are determined by using the County's volume to capacity ratio and the Highway Capacity Manual (HCM) peak-hour arterial and two-lane highway analysis.

Signalized and Unsignalized Intersections HCM Methodology

The 2000 *HCM* published by the Transportation Research Board establishes procedures to evaluate highway facilities and rate their ability to process traffic volumes. The terminology "level of service" is used to provide a qualitative evaluation based on certain quantitative calculations, which are related to empirical values.

Level of service (LOS) for signalized intersections is defined in terms of delay, which is a measure of driver discomfort, frustration, fuel consumption, and loss of travel time.

Specifically, LOS criteria are stated in terms of the average control delay per vehicle for the peak 15-minute period within the hour analyzed. The average control delay includes initial deceleration delay, queue move-up time, and final acceleration time in addition to the stop delay. The LOS for unsignalized intersections is determined by the computed or measured control delay and is defined for each minor movement. At an all-way stop controlled intersection, the delay reported is the average control delay of the intersection. At a one-way or two-way stop controlled intersection, the delay reported represents the worst movement, which are typically the left-turns from the minor street approach.

The criteria for the various levels of service designations are given in **Table 4-11**.

**TABLE 4-11
LOS CRITERIA FOR INTERSECTIONS**

LOS	CONTROL DELAY (sec/veh)		DESCRIPTION
	Signalized Intersection (a)	Unsignalized Intersection (b)	
A	<10.0	<10.0	Operations with very low delay and most vehicles do not stop.
B	>10.0 and <20.0	>10.0 and <15.0	Operations with good progression but with some restricted movement.
C	>20.0 and <35.0	>15.0 and <25.0	Operations where a significant number of vehicles are stopping with some backup and light congestion.
D	>35.0 and <55.0	>25.0 and <35.0	Operations where congestion is noticeable, longer delays occur, and many vehicles stop. The proportion of vehicles not stopping declines
E	>55.0 and <80.0	>35.0 and <50.0	Operations where there is significant delay, extensive queuing, and poor progression.
F	>80.0	>50.0	Operations that is unacceptable to most drivers, when the arrival rates exceed the capacity of the intersection.
Notes: (a) 2000 Highway Capacity Manual, Chapter 16, Page 2, Exhibit 16-2 (b) 2000 Highway Capacity Manual, Chapter 17, Page 2, Exhibit 17-2			

Roadway Segments

In order to determine the impacts on the study area roadway segments within the County of San Diego, **Table 4-12** has been developed by the County and is used as a reference to evaluate the operation of its roadway segments. The segment traffic volumes below LOS E, as shown in this table, are considered at capacity because at LOS E the volume-to-capacity Ratio (v/c Ratio) is equal to 1.0.

The roadway segment analysis was only conducted for a typical weekday. The Friday and Saturday roadway operation was not analyzed for the following reasons:

- The Gaming Facility project daily traffic generation is the same for the weekday as for the Friday or Saturday operations; and
- Average daily traffic volumes within the study area are higher on weekdays.

**TABLE 4-12
LOS CRITERIA FOR ROADWAY SEGMENTS
WITHIN THE COUNTY OF SAN DIEGO**

ROAD			LEVEL OF SERVICE (LOS)				
CLASSIFICATION	LANES	X- Section ^(a)	A	B	C	D	E
Expressway	6	126/146	36,000	54,000	70,000	86,000	108,000
Prime Arterial	6	102/122	22,200	37,000	44,600	50,000	57,000
Major Road	4	78/98	14,800	24,700	29,600	33,400	37,000
Collector	4	64/84	13,700	22,800	27,400	30,800	34,200
Town Collector	2	54/74	3,000	6,000	9,500	13,500	19,000
Light Collector	2	40/60	1,900	4,100	7,100	10,900	16,200
Rural Collector	2	40/84	1,900	4,100	7,100	10,900	16,200
Rural Light Collector	2	40/60	1,900	4,100	7,100	10,900	16,200
Recreational Highway	2	40/100	1,900	4,100	7,100	10,900	16,200
Rural Mountain Road	2	40/100	1,900	4,100	7,100	10,900	16,200
Residential Collector	2	40/60	--	--	4,500	--	--
Residential Road	2	36/56	--	--	1,500	--	--
Residential Cul de sac or Loop road	2	32/52	--	--	200	--	--
Notes: The volumes and the average daily level of service listed above are only intended as a general planning guideline. Levels of service are not applied to residential streets since their primary purpose is to serve abutting lots, not carry through traffic. Levels of service normally apply to roads carrying through traffic between major trip generators and attractors. (a) XXX/XXX=Curb-to-curb width (feet)/right-of-way width (feet): based on the County of San Diego Public Road Standards.							
SOURCE: County of San Diego Public Road Standards, Table 1 (page 9)							

HCM Peak-Hour Arterial Analysis

A peak-hour arterial analysis was conducted for segments of SR-94 between Via Mercado and Jefferson Road - Proctor Valley Road using the 2000 HCM Chapter 15 procedures since this segment functions as an urban arterial due to the number of signals along this corridor. Peak-hour arterial analysis estimates average travel speed

on the given facility based on the operations of controlling intersections. This type of analysis provides a more accurate representation of street segment LOS than Average Daily Trip (ADT)-based evaluation because it considers peak-hour volumes and incorporates the capacity benefits of intersection turn lanes. Based on its speed, SR-94 is classified as a Class I arterial facility. The criteria for the various level of service designation for Class I arterials is given in **Table 4-13**.

TABLE 4-13
LOS CRITERIA FOR URBAN ARTERIALS CLASS I FACILITIES

LOS	AVERAGE TRAVEL SPEED (mph) (a)	DESCRIPTION
A	>42.0	Free-flow operations, motorists can travel at desired speed and passing demand is well below capacity.
B	>34.0 and <42.0	Stable flow, with speeds generally higher than 50 miles per hour. The passing demand to maintain desired speeds becomes significant.
C	>27.0 and <34.0	Stable flow at slower speeds. Individuals become noticeably affected by interactions with others, and percent time-spent-following drastically increases.
D	>21.0 and <27.0	Unstable flow, with slower speeds and long platoons. Turning vehicles and roadside distractions cause major shock waves in the traffic stream.
E	>16.0 and <21.0	Operating conditions at or near capacity. Speeds are slow, and passing is virtually impossible. Platooning becomes intense.
F	< 16.0	Heavily congested flow.
Notes: Based on the Caltrans Highway Design Manual, Table 406 "Traffic Flow Conditions at Intersections at Various Levels of Operation", page 400-23. (a) = Intersecting Lane Vehicles/hour (ILV/hr) (b) = The amount of congestion depends on how much the ILV/hr value exceeds 1500. Observed flow rates will normally not exceed 1500 ILV/hr, and the excess will be delayed in a queue.		

HCM Peak-Hour Two-Lane Highway Analysis

For the two-lane segment of SR-94 where the intersections are not signalized, the 2000 Highway Capacity Manual "two-lane highway" methodology was used.

According to the Caltrans SR-94 operations report, the highway is categorized as a Class I facility.

Level of service for Class I highways is based on a combination of two parameters: percent time-spent following (PTSF) and average travel speed in miles/hour (MPH). The PTSF is the average percent of total travel time that vehicles must travel in platoons behind slower vehicles due to inability to pass on a two-lane highway. This parameter represents the freedom to maneuver and convenience of travel along a facility. The criteria for the various level of service designations for Class I two-lane highway facilities are given in **Table 4-14**.

The two-lane highway calculations were performed using the HCS+ software (Version 5.4).

TABLE 4-14
LOS CRITERIA FOR TWO-LANE HIGHWAY CLASS I FACILITIES

LOS	PERCENT SPENT FOLLOWING (PTSF) (a)	AVERAGE TRAVEL SPEED (MPH) (a)	DESCRIPTION
A	<35.0	>55.0	Free-flow operations, motorists can travel at desired speed and passing demand is well below capacity.
B	>35.0 and <50.0	>50.0 and <55.0	Stable flow, with speeds generally higher than 50 miles per hour. The passing demand to maintain desired speeds becomes significant.
C	>50.0 and <65.0	>45.0 and <50.0	Stable flow at slower speeds. Individuals become noticeably affected by interactions with others, and percent time-spent-following drastically increases.
D	>65.0 and <80.0	>40.0 and <45.0	Unstable flow, with slower speeds and long platoons. Turning vehicles and roadside distractions cause major shock waves in the traffic stream.
E	<80.0	<40.0	Operating conditions at or near capacity. Speeds are slow, and passing is virtually impossible. Platooning becomes intense.
F	N/A	N/A	Heavily congested flow.
Notes: (a) 2000 Highway Capacity Manual, Chapter 12			

4.8.1.5 Existing Conditions

Intersection Conditions

Table 4-15 displays the peak-hour LOS analysis results for the study intersections under Existing Conditions for the weekday conditions. **Table 4-16** displays the peak-hour LOS

**TABLE 4-15
EXISTING WEEKDAY CONDITIONS
PEAK-HOUR INTERSECTION LOS**

INTERSECTION		TRAFFIC CONTROL	PEAK HOUR	EXISTING	
				DELAY (a)	LOS (b)
1	SR-94 & Via Mercado	Signal	AM	17.8	B
			PM	17.9	B
2	SR-94 & Jamacha Blvd.	Signal	AM	15.3	B
			PM	29.6	C
3	SR-94 & Jamacha Rd.	Signal	AM	23.8	C
			PM	21.2	C
4	SR-94 & Cougar Canyon Rd.	Signal	AM	17.9	B
			PM	10.2	B
5	SR-94 & Steele Canyon Rd.	Signal	AM	28.8	C
			PM	24.7	C
6	SR-94 & Indian Springs Dr./Lyons Valley Rd	Two-Way Stop	AM	589.6	F
			PM	73.6	F
7	SR-94 & Proctor Valley Rd./Jefferson Rd.	Signal	AM	10.9	B
			PM	10.1	B
8	SR-94 & Maxfield Rd.	One-Way Stop	AM	12.3	B
			PM	14.8	B
9	SR-94 & Melody Rd./Peaceful Valley Ranch Rd.	Two-Way Stop	AM	14.5	B
			PM	14.4	B
10	SR-94 & Reservation Rd.	One-Way Stop	Under this scenario, this intersection does not have conflicting movements.		
11	SR-94 & Honey Springs Rd.	One-Way Stop	AM	12.0	B
			PM	11.0	B
12	SR-94 & Otay Lakes Rd.	One-Way Stop	AM	11.2	B
			PM	12.3	B
13	Jamacha Blvd. & Sweetwater Springs Blvd.	Signal	AM	24.9	C
			PM	20.1	C
14	Willow Glen Dr. & Jamacha Rd.	Signal	AM	45.2	D
			PM	32.3	C
15	Steele Canyon Rd. & Willow Glen Dr.	Signal	AM	38.3	D
			PM	26.6	C
16	Steele Canyon Rd. & Jamul Dr.	Signal	AM	16.7	B
			PM	15.1	B
17	Lyons Valley Rd. & Jamul Dr.	One-Way Stop	AM	12.2	B
			PM	12.3	B
18	Jefferson Rd. & Lyons Valley Rd.	One-Way Stop	AM	10.5	B
			PM	11.0	B
19	Melody Rd. & Proctor Valley Rd.	One-Way Stop	AM	7.7	A
			PM	7.5	A

Notes:

Bold values indicate Caltrans intersections operating at LOS D, E or F and San Diego County intersections operating at LOS E or F.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0

**TABLE 4-16
EXISTING FRIDAY/SATURDAY CONDITIONS
PEAK-HOUR INTERSECTION LOS**

INTERSECTION		TRAFFIC CONTROL	PEAK HOUR	EXISTING	
				DELAY (a)	LOS (b)
1	SR-94 & Via Mercado	Signal	FRI PM	17.3	B
			SAT PM	11.6	B
2	SR-94 & Jamacha Blvd.	Signal	FRI PM	32.9	C
			SAT PM	15.8	B
3	SR-94 & Jamacha Rd.	Signal	FRI PM	24.5	C
			SAT PM	21.0	C
4	SR-94 & Cougar Canyon Rd.	Signal	FRI PM	10.0	B
			SAT PM	13.5	B
5	SR-94 & Steele Canyon Rd.	Signal	FRI PM	27.3	C
			SAT PM	26.2	C
6	SR-94 & Indian Springs Dr./Lyons Valley Rd	Two-Way Stop	FRI PM	125.3	F
			SAT PM	40.7	E
7	SR-94 & Proctor Valley Rd./Jefferson Rd.	Signal	FRI PM	15.9	B
			SAT PM	13.8	B
8	SR-94 & Maxfield Rd.	One-Way Stop	FRI PM	14.2	B
			SAT PM	11.6	B
9	SR-94 & Melody Rd./Peaceful Valley Ranch Rd.	Two-Way Stop	FRI PM	16.6	C
			SAT PM	12.9	B
10	SR-94 & Reservation Rd.	One-Way Stop	Under this scenario, this intersection does not have conflicting movements.		
11	SR-94 & Honey Springs Rd.	One-Way Stop	FRI PM	12.0	B
			SAT PM	10.5	B
12	SR-94 & Otay Lakes Rd.	One-Way Stop	FRI PM	12.6	B
			SAT PM	10.6	B
13	Jamacha Blvd. & Sweetwater Springs Blvd.	Signal	FRI PM	21.5	C
			SAT PM	15.1	B
14	Willow Glen Dr. & Jamacha Rd.	Signal	FRI PM	36.3	D
			SAT PM	32.6	C
15	Steele Canyon Rd. & Willow Glen Dr.	Signal	FRI PM	27.9	C
			SAT PM	21.6	C
16	Steele Canyon Rd. & Jamul Dr.	Signal	FRI PM	12.7	B
			SAT PM	12.9	B
17	Lyons Valley Rd. & Jamul Dr.	One-Way Stop	FRI PM	11.8	B
			SAT PM	10.3	B
18	Jefferson Rd. & Lyons Valley Rd.	One-Way Stop	FRI PM	10.5	B
			SAT PM	9.6	A
19	Melody Rd. & Proctor Valley Rd.	One-Way Stop	FRI PM	7.5	A
			SAT PM	7.6	A

Notes:

Bold values indicate Caltrans intersections operating at LOS D, E or F and San Diego County intersections operating at LOS E or F.

(a) Delay refers to the average control delay for the entire intersection, measured in seconds per vehicle. At a two-way stop-controlled intersection, delay refers to the worst movement.

(b) LOS calculations are based on the methodology outlined in the *2000 Highway Capacity Manual* and performed using Synchro 8.0

analysis results for the typical Friday and Saturday conditions. As shown in the tables, all intersections currently operate at LOS D or better during all peak periods analyzed, except for the following intersection:

- SR-94 (Campo Road) and Indian Spring Road/Lyons Valley Road (LOS F– weekday morning and afternoon peak-hour, Friday afternoon peak-hour, LOS E Saturday afternoon peak-hour)

SR-94 (Campo Road) and Lyons Valley Road intersection is currently a two-way stop controlled intersection. During the peak-hour operations, considerable delay is experienced by vehicles entering the intersection from Lyons Valley Road as the through traffic along SR-94 (Campo Road) does not provide sufficient vehicle gaps needed to enter the intersection.

Roadway Segment Conditions

Table 4-17 displays the roadway segments analysis under Existing Conditions for a typical weekday. As shown in the table, all roadway segments within the study area currently function at LOS D or better, except for the following roadway segment:

- Steele Canyon Road between Jamul Drive and Willow Glen Drive (LOS E)

**TABLE 4-17
EXISTING ROADWAY SEGMENT LOS**

ROADWAY SEGMENT	ROADWAY CLASSIFICATION	LOS E CAPACITY	EXISTING CONDITIONS		
			ADT	V/C RATIO	LOS
Sweetwater Springs Blvd.					
between Jamacha Blvd. and Austin Dr.	4 Lane Major Road	37,000	15,483	0.418	B
Jamacha Blvd.					
between SR 94 and Sweetwater Springs Blvd.	4 Lane Major Road	37,000	16,683	0.451	B
Jamacha Rd. (SR 54)					
between SR 94 and Fury Ln.	6 Lane Prime Arterial	57,000	41,605	0.730	C
between Willow Glen Dr. and Brabham St.	6 Lane Prime Arterial	57,000	23,521	0.413	B
Steele Canyon Rd.					
between SR 94 and Jamul Dr.	2 Lane Light Collector	16,200	6,379	0.394	C
between Jamul Dr. and Willow Glen Dr.	2 Lane Light Collector with Continuous Turn Lane	19,000	14,028	0.738	E

**TABLE 4-17 cont.
EXISTING ROADWAY SEGMENT LOS**

ROADWAY SEGMENT	ROADWAY CLASSIFICATION	LOS E CAPACITY	EXISTING CONDITIONS		
			ADT	V/C RATIO	LOS
Jamul Dr.					
between Steele Canyon Rd. and Lyons Valley Rd.	2 Lane Light Collector	16,200	2,433	0.150	B
Willow Glen Dr.					
between Jamacha Rd. and Steele Canyon Rd.	4 Lane Major Road	37,000	19,986	0.540	B
between Steele Canyon Rd. and Hillsdale Rd.	2 Lane Light Collector with Continuous Turn Lane	19,000	12,237	0.644	D
Lyons Valley Rd.					
between SR 94 and Jefferson Rd.	2 Lane Light Collector	16,200	5,522	0.341	C
between Jefferson Rd. and Jamul Dr.	2 Lane Light Collector	16,200	7,008	0.433	C
between Jamul Dr. and Myrtle St.	2 Lane Light Collector	16,200	8,493	0.524	D
Jefferson Rd.					
between SR 94 and Lyons Valley Rd.	2 Lane Light Collector	16,200	2,685	0.166	B
Melody Rd. (b)					
between SR 94 and Proctor Valley Rd.	2 Lane Light Collector	16,200	1,374	0.085	A
Proctor Valley Rd.					
between Melody Rd. and Pioneer Wy.	2 Lane Light Collector	16,200	1,630	0.101	A
Honey Springs Rd.					
between SR 94 and Mother Grundy Truck Trail	2 Lane Light Collector	16,200	1,579	0.097	A
Otay Lakes Rd.					
between SR 94 and Otay Mountain Truck Trail	2 Lane Light Collector	16,200	2,582	0.159	B
Notes: Bold values indicate roadway segments operating at LOS E or F. (a) The v/c Ratio is calculated by dividing the ADT volume by each respective roadway segment's capacity. (b) Under the alternative Access from Melody Road, this roadway segment from the new access road to Proctor Valley Road would have a similar LOS. Source: Kimley-Horn and Associates, 2012.					

Peak-Hour Arterial Conditions

Table 4-18 displays the peak-hour arterial analysis along SR-94 between Via Mercado and Jefferson Road/Proctor Valley Road under Existing Conditions. The roadway segments currently function at LOS B or better.

**TABLE 4-18
EXISTING PEAK-HOUR SR-94 ARTERIAL SEGMENT ANALYSIS
VIA MERCADO TO PROCTOR VALLEY ROAD**

PEAK-HOUR CONDITION	DIRECTION	SPEED (a)	LOS (b)
Weekday - AM	EB	48.9	A
	WB	41.7	B
Weekday - PM	EB	45.4	A
	WB	42.3	B
Friday PM	EB	43.9	A
	WB	42.4	A
Saturday PM	EB	45.2	A
	WB	42.2	A
Notes: (a) Speed is calculated as the roadway segment distance divided by the travel time in miles per hour (mph). (b) The arterial LOS is based on average through-vehicle travel speed for the segment or for the entire street under consideration and is influenced both by the number of signals per mile and by the intersection control delay. Source: Kimley-Horn and Associates, 2014			

Peak-Hour Two-Lane Highway Conditions

Table 4-19 displays the peak-hour two-lane highway analysis along SR-94 (Campo Road) between Jefferson Road/Proctor Valley Road and Otay Lakes Road under Existing Conditions. The table shows the results of the weekday conditions and Friday and Saturday afternoon peak-hour conditions. As shown in the table, all roadway segments within the study area currently function at LOS D.

**TABLE 4-19
EXISTING SR-94
TWO-WAY TWO-LANE HIGHWAY SEGMENT ANALYSIS**

HIGHWAY SEGMENT	PEAK HOUR	EXISTING		
		LOS (a)	Average Travel Speed (mph)	PTSF (b)
Proctor Valley Road to Melody Rd	Weekday AM	D	40.5	64.9%
	Weekday PM	D	40.5	64.8%
	Friday PM	D	40.2	68.7%
	Saturday PM	D	41.0	62.7%
Melody Rd to Otay Lakes Rd	Weekday AM	D	44.4	63.4%
	Weekday PM	D	44.4	63.5%
	Friday PM	D	44.0	66.0%
	Saturday PM	D	45.0	61.1%
Notes: Bold values indicate intersections operating at LOS D, E or F. (a) LOS is based on Average Travel Speed and Percent-time-spent-following per Chapter 12 of the 2000 Highway Capacity Manual. (b) PTSF = Percent time-spent-following SOURCE: Kimley-Horn and Associates, 2014				

4.8.2 LAND USE

4.8.2.1 Regional Setting

The Gaming Facility project site is located in the southwestern portion of San Diego County, which is the southwestern most county in California. San Diego County is the second largest county by area in the state at 4,425 square miles, and is home to approximately 3.05 million people and contains 1.14 million housing units within the incorporated and unincorporated areas. The County extends from the Mexican border in the south, to Orange/Riverside Counties on the north, and Imperial County on the east.

The Pacific Ocean forms the western boundary of the County. The population in San Diego County, which grew 10 percent from 2000 to 2010, accounts for approximately 8.26 percent of California's 37 million population.

The County consists of eighteen incorporated cities and numerous unincorporated communities. The metropolitan area of the City of San Diego is the largest in the County, followed by Chula Vista, Oceanside and Escondido, respectively. Approximately fifty-five percent of County lands are held in the public trust as national

forests and state, county or local parks. Jamul is an unincorporated community within San Diego County measuring approximately 16.8 square miles. There are eighteen federally recognized Native American reservations within the County, covering 125,000 acres (County of San Diego, 2011). The Jamul Reservation, measuring approximately 6 acres in size, is the only Indian reservation within the unincorporated Jamul Community.

4.8.2.2 Jamul/Dulzura Subregion Setting

The Jamul/Dulzura Subregion of San Diego County encompasses approximately 168 square miles extending southward to the U.S./Mexico border (**Figure 4-11**). Land within the Jamul/Dulzura Subregion is characterized by rolling hills with flat, broad valleys. The Subregion is home to approximately 10,159 people and 3,231 housing units. As of January 2012 the Jamul/Dulzura Subregion was home to approximately 9,542 people and 3,305 housing units (SANDAG, 2012). There are several unincorporated communities within the Jamul/Dulzura Subregion including Jamul, Steel Canyon, Dulzura and Barrett Junction. The Jamul Community, located in the northwestern portion of the Jamul/Dulzura Subregion, is the largest of these communities and houses a majority of the Subregion's population. State Route 94, which traverses the Subregion in a northwest to southeast direction, provides regional access to the area.

The northwest section of this Subregion has recently felt residential growth pressures according to the San Diego County Jamul/Dulzura Sub regional Plan adopted in August 2011 (San Diego County, 2011). As of January 1, 2010, there were 3,231 housing units divided between single-family (3,010 units), multi-family units (125 units), and mobile/other homes (96 units) within the Jamul/Dulzura Sub regional planning area. Commercial development, consisting primarily of strip commercial, is generally confined to two nodes in the Jamul Community. Agricultural uses occur in small, scattered areas and include dry land farming, grazing, and some row crops.

4.8.2.3 Jamul Community Setting

The unincorporated Jamul Community (census designated place) covers a land area of 17 square miles and, as of 2010, was home to 6,163 people. The population growth from 2000 to 2010 equaled a 4% growth rate, while the State of California experienced a 10% growth rate during the same period. As of 2010, the Jamul community contained 1,974 housing units with a median value of \$706,000 (U.S. Census, 2012). The U.S. Census estimates that Jamul Community has a population density of approximately 3.04 people per household (Caltrans 2014).

Within the vicinity of the proposed access road, existing land uses consist primarily of rural residences and open space. The natural terrain consists of sparsely vegetated rocky hillsides with open tree-lined drainages, and is interrupted by vegetated residential

lots. The San Diego Rural Fire Protection District (SDRFD) has recently opened a new fire station on Peaceful Valley Ranch Road. A SDRFD station that was formerly located on the 4-acre triangular parcel owned by the JIV (located immediately north of JIV), has been removed and only the concrete pads remain. The triangular parcel is currently vacant, with building slabs, pavement, and a paved driveway that serves JIV (Caltrans, 2014).

To the south of the proposed access road and southwest of SR-94 is the Rancho Jamul Ecological Reserve, (approximately 4,800 acres), which were transferred to the CDFW for preservation purposes and serves as a Core area for the MSCP. To the northeast of the Ecological Reserve is the Hollenbeck Canyon Wildlife Area. Both the Ecological Reserve and the Wildlife Area are owned by the State of California and managed by CDFW for conservation purposes. Rancho Jamul Estates, a low-density residential development, is located approximately 0.7 miles southeast of Reservation Road. Rural residences are located in the hilly terrain in the vicinity. Residential lots are large, ranging from just under one acre to over ten acres (Caltrans, 2014).

Northeast of JIV across SR-94 is the Peaceful Valley Ranch subdivision, which was approved by the County Board of Supervisors in 2008. SR-94 forms the western boundary of Peaceful Valley Ranch, while Melody Road forms a portion of the northern boundary. A portion of Daley Ranch forms the southern boundary and a mixture of private properties form the eastern boundary. The major subdivision approval of 181+/- acres created 57 estate residential, equestrian, open space, and public fire service lots within the Jamul-Dulzura Sub regional Plan. The County General Plan re-designations and rezone allowed for increased residential densities on the residential portion of the land, while also allowing for a Major Use Special Permit for spectator events at a private equestrian/polo training facility. Primary access to Peaceful Valley Ranch is via SR-94 and Peaceful Valley Ranch Road, which is located across from Melody Road (Caltrans, 2014).

The trend of land use development/growth over the last two decades within the Jamul Community has been characterized by residential development and associated commercial growth. San Diego County estimated in 1995 that the Jamul/Dulzura Subregion planning area had a population of 5,000 people. This estimate was at 9,915 people in 2008 and 10,159 in 2009. The San Diego County estimates the buildout potential of the Jamul/Dulzura Subregion to be at approximately 16,000 (Caltrans, 2014).

Partly as a result of this growth, the County has increased efforts to preserve habitat for endangered species and other natural resources. The Land Use Map for the Jamul/Dulzura planning area issued by the County in 2008 showed a shift in land use designations in the region east of the Gaming Facility project site from General Agriculture and Multiple Rural Use to Open Space and Rural Lands. Population growth

is expected to center primarily in the Jamul Community, west and north of the proposed access road improvements. The County adopted the revised Jamul/Dulzura land use plan in August 2011 (Caltrans, 2014).

4.8.2.4 JIV Reservation Setting

The existing Jamul Reservation is located on approximately 6 acres of JIV trust land in the Jamul/Dulzura Subregion approximately 1-mile south of the unincorporated community of Jamul. Regional access to the Reservation is provided off SR-94. The Reservation is currently being excavated to make room for the Gaming Facility. The western portion of the Reservation contains a community center and tribal office, which will remain following Gaming Facility construction. Willow Creek transects the property in a north-south direction and has light stream flow much of the year. Primary access to the Reservation is from Daisy Drive on the adjacent 4-acre triangular parcel. Reservation Road has been out of operation for several years.

4.8.2.5 Access Road Options Setting

The majority of the roadway improvements for Options 1 (Improve Reservation Road) and 2 (Improve Daisy Drive) are located within pre-existing highway ROW owned by Caltrans. SR-94 is a two-lane undivided highway within this stretch of roadway; the typical cross-section consists of two 12-foot travel lanes, in the north and southbound directions, and two 8-foot shoulders. The roadway is lined with fence posts and utility poles, a number of private driveways, as well as intersecting county roads, including Melody Road. It is expected that a certain portion of work would be on strips of parcels bordering the existing Highway ROW, which is under private ownership.

The Option 1 and 2 improvements would occur primarily on vacant land adjacent to existing SR-94 pavement (inside and outside the existing ROW), as well as vacant privately owned land located on the 4-acre parcel north of Reservation Road. An existing access drive (Daisy Drive) and remnants of the old fire station driveway are located on the adjacent 4-acre parcel north of the Reservation. Under Option 3, an entirely new roadway from Melody Road to the Reservation would be constructed on land consisting primarily of annual grasslands and riparian/oak woodland.

The segment of SR-94 that makes up the footprint for the three options borders parcels in San Diego County identified by the General Plan for agricultural and low density rural residential uses. Much of the surrounding land is currently used for agricultural purposes, open space, rural residential uses, or is vacant.

Land affected by the new roadway proposed west of SR-94 under Option 3 would travel through land regulated under the MSCP. Within the access Option 3 alignment exists a

Hardline Preserve area, a Pre-Approved Mitigation Area, and a Take-Authorized Area, as defined by the MSCP.

4.8.2.6 Guidance Documents

Land use on the Reservation is regulated and guided by the JIV Council, the governing body of the JIV Government. Adjacent land uses are regulated by either Caltrans (SR-94), CDFW (Rancho Jamul Ecological Reserve to the south) or San Diego County. Land use development on adjacent County land is guided by the recently updated and adopted County General Plan and Jamul/Dulzura Subregional Plan, which were both updated and adopted in August 2011. The various land use plans and programs guiding off-reservation land uses are summarized below:

San Diego County General Plan Update

The County Board of Supervisors voted on August 3, 2011 to approve the County General Plan Update, which represents the first large scale update of the General Plan in approximately 30 years. The General Plan Update directs future growth in the unincorporated areas of the County with a projected capacity to accommodate more than 232,300 homes (County of San Diego, 2011a). The recently adopted document reduces housing capacity by 15 percent and shifts 20 percent of future growth from the eastern backcountry areas to the western communities. The elements of the General Plan Update include the following:

- Vision and Guiding Principles,
- Land Use Element,
- Mobility Element,
- Conservation and Open Space Element,
- Housing Element,
- Safety
- Noise Element, and
- Implementation

The Land Use element designates the general location and intensity of housing, business, industry, open space, education, public buildings and grounds, waste disposal facilities and other land uses. This element of the General Plan Update states that

Community Plans, such as the Jamul/Dulzura Subregional Plan (at times referred to as a “Community” Plan), define goals and policies to provide more precise guidance regarding the character, land uses, and densities. Given that goals and policies of the Jamul/Dulzura Subregional Plan provide more precise guidance than the General Plan, the discussion of Land Use goals and objectives will be provided below within the Jamul/Dulzura discussion.

The “Other Land Use Designations” section of the County’s Land Use Element states “(s)even additional land use designations are applied in the General Plan to recognize other existing land use types and jurisdictions.” One of these categories is “Tribal Lands”, which comprise about 125,000 acres, or 5%, of the unincorporated County on 18 federally recognized reservations or Indian Villages.

Jamul/Dulzura Subregional Plan

The Jamul/Dulzurra Subregional Plan was initially adopted in 1979 to guide development in the unincorporated areas of Jamul and other rural communities in the region, including Steel Canyon, Dulzurra, and Barrett Junction. The Subregional Plan was most recently amended in June 2014, and continues to have the goal of encouraging development in a manner as to retain the rural atmosphere of the community. The updated Jamul/Dulzura Subregional Plan contains six main sections and an appendix identifying Resource Conservation Areas. The main sections to the Subregional Plan address land use, mobility, recreation, conservation, scenic highway and plan implementation.

Land use designations in the Reservation vicinity include Semi-Rural Residential, Specific Plan Area, Open Space (Conservation) and Open Space (Recreation). The recently adopted Land Use Map for the Jamul/Dulzura planning area shows a shift in land use designations in the vicinity. Areas south of the Reservation, formerly designated General Agriculture, were converted to Open Space (conservation), consistent with the creation of the Rancho Jamul Ecological Reserve and the Hollenbeck Canyon Wildlife Area. Other area designations shifted slightly with areas of Multiple Rural Use converted to Semi-Rural Residential, and Residential areas were converted to Semi-rural Residential. The 4-acre parcel is designed Semi-Rural Residential (SR-2) and the 87-acre parcel is designed Specific Plan Area.

The Jamul/Dulzura goals include the following:

Land Use:

Goal: Development of the land in such a manner as to retain the rural densities and land uses of the community.

Goal: Agricultural land uses, which are compatible with limited water resources and established residential development.

Mobility:

Goal: Develop a transportation system that provides for safe, efficient travel throughout this rural community and preserves the beauty, quality, and rural character of the Jamul/Dulzura Subregional Planning area.

Goal: Automobile and non motorized modes of travel is accommodated within the planning area.

Goal: A local road system that is safe and efficient.

Recreation:

Goal: Support the establishment of improved recreational facilities in the Jamul/Dulzura Planning Area that will meet the distinctive needs of the community and enrich the lives of the residents.

Conservation:

Goal: Environmental resources in the Jamul/Dulzura area that are carefully managed to maintain them for future needs.

Scenic Highways:

Goal: The designation of a scenic highway system that provides attractive and scenic travel routes within the Jamul/Dulzura Subregional Area.

4.9 PUBLIC SERVICES

The Public Services discussion of the 2003 Final EIS addressed Water Supply (3.9.1), Wastewater Service (3.9.2), Solid Waste Service (3.9.3), Electricity, Natural Gas and Telecommunications (3.9.4), and Public Health and Safety (3.9.5). An update to each of these discussions, where needed, is presented below. Some information contained below is the same as presented in the 2003 Final EIS because environmental circumstances remain unchanged.

4.9.1 WATER SUPPLY

Water in San Diego County comes primarily from imported sources; local surface water and groundwater resources are inadequate to supply the population. The water retailer nearest to the Reservation is the Otay Water District, which is a member agency of the San Diego County Water Authority (SDCWA), which is in turn a member agency of the Metropolitan Water District of Southern California (MWD). The MWD receives water from the Colorado River and from the Sacramento River Delta through the State Water Project. SDCWA recently agreed to a water transfer with Imperial Irrigation District for additional Colorado River water.

The Otay Water District service area encompasses 129 square miles, and serves the communities of southern El Cajon, La Mesa, Rancho San Diego, Jamul, Spring Valley, Bonita, eastern Chula Vista, and the Otay Mesa along the international border with Mexico. The Otay Water District currently obtains its water supply from SDWCA's Otay FCF (Flow Control Facility) No. 11 on Pipeline No. 4 of the Second San Diego Aqueduct. The water supply is conveyed by gravity from FCF No. 11 through 42 inch and 36-inch transmission pipelines to regulatory reservoirs. The water is pumped and stored through a series of pump stations and reservoirs until it reaches Jamul (located in the 1296 pressure zone/service area), where it is stored in 3 reservoirs with a combined capacity of 5.03 million gallons. This system delivers flow capacities of 260 to 860 gallons per minute (gpm).

The Otay Water District's Master Plan documents the District's effort to model and anticipate future water demands of its customers. The Master Plan takes into account current transfer and storage facilities, future demand due to build out, and future infrastructure build out. According to the current (2013) Master Plan, the existing emergency water reserves are sufficient to serve the 1296 pressure zone. The Master Plan requires that 10 days of potable water service be maintainable in the event that water supplies from pipeline No. 4 are shut off. The ultimate project water storage requirement for the 1296 pressure zone is 5.71 million gallons. The current capacity for total reservoir storage volume is 5.03 million gallons. This storage deficit can be met with transfer from the adjacent pressure zone 940, which has excess capacity. Furthermore, an additional 10.0-million gallon reservoir will be provided to the 1296 pressure zone by 2016 (during Phase implementation of the District's Master Plan).

Current pumping stations in the 1296 pressure zone are also adequate to meet the pump and pressure requirements for the ultimate buildout of this service area (the town of Jamul and the Reservation). The Otay Water District sums up its capacity in this quote from the Master Plan: "The projected ultimate maximum day demand for the pressure zones to be served by the 1296-1 PS [pump station] totals 3,017 gpm and it is

planned that this demand will be met by expansion of the existing 1296-1 PS. The firm pumping capacity of the existing 1296-1 PS is 3,300 gpm and is adequate to meet the ultimate needs for this area.” (p. 4-74, Otay Water District 2013).

Note that the Master Plan’s ultimate storage requirements and pumping requirements were designed for the residential build-out of Village 14 and Village 16 assuming that 960 dwelling units would have been constructed and would be utilizing District services. In reality, Village 14 and 16 are large tracts of land near the Reservation that have been purchased by the California Department of Fish and Game and deed-restricted as wildlife preserves. Therefore, the projected ultimate consumption values are conservative due to the planned usages being decreased by open-space designations.

The Otay Water District distributes high quality water that meets or exceeds federal and state requirements for safe drinking water (Otay Water District, 2011a). No additional treatment is recommended for distribution of this water to the various project facilities. Water quality information on Otay’s drinking water is available from annual Consumer Confidence Reports published by the Otay Water District (Otay Water District, 2011a).

The Otay Water District currently maintains 2 water mains in the area of the Reservation: 12-inch water main in Melody Road and a 16-inch water main under SR-94. Currently, the Reservation receives water through a 12-inch diameter main from the 16-inch main under SR-94. The Jamul Gaming Facility Project would tap into the existing 12-inch main under Reservation Road with a 6-inch PVC domestic potable water line with a meter and backflow prevention device. The existing 12-inch diameter main would be converted to use for fire suppression.

4.9.2 WASTEWATER SERVICE

The Reservation is not within a wastewater treatment service district, and no treatment facilities currently exist on the Gaming Facility site. The Otay sewage treatment area ends approximately 1/2 mile east of the junction of SR-94 and Jamacha Rd (Route 54) or approximately two miles west of the Reservation on Melody Road (Ripperger, 2001; Coburn-Boyd, 2011). According to the San Diego County Public Works Department, they do not treat wastewater in the Jamul area. Residences in the town of Jamul are all on septic tanks (Ripperger, 2001; Coburn-Boyd, 2011). The 15 residential lots and the JIV office on the Reservation previously utilized septic systems. These abandoned appurtenances (tanks, distribution lines, leach fields, etc.) were removed prior to the start of construction on the Jamul Gaming Facility Project.

The Otay Water District operates the Ralph W. Chapman Water Recycling Facility in Rancho San Diego just south of SR-94 at the Steele Canyon Bridge (Otay Water District, 2011b). The District provides wastewater collection and treatment services to over

5,000 homes in the Jamacha Basin. The treatment facility produces up to 1.3 million gallons per day of tertiary-treated reclaimed water, which is distributed into the eastern Chula Vista area and used to irrigate landscapes in golf courses, schools, public parks, and along roadways (Coburn-Boyd, 2011; Otay Water District, 2011).

4.9.3 SOLID WASTE SERVICE

4.9.3.1 California Integrated Waste Management Act

The management of non-hazardous solid waste in San Diego County is mandated by state law and guided by policies at the state and local levels. In 1989, the State of California enacted AB 939, the California Integrated Waste Management Act, whose purpose is to: reduce, recycle, and reuse solid waste generated in the State to the maximum extent feasible; improve regulation of existing solid waste landfills; ensure that new solid waste landfills are environmentally sound; streamline permitting procedures for solid waste management facilities, and specify the responsibilities of local governments to develop and implement integrated waste management programs. AB 939 requires that all local jurisdictions, cities, and counties divert 50 percent of the total waste stream from landfill disposal. Each local jurisdiction must demonstrate compliance by instituting source reduction programs.

Local solid waste management practices and programs are summarized in the County of San Diego Integrated Waste Management Plan (CIWMP). The CIWMP consists of a Summary Plan and the following four elements: 1) a Source Reduction and Recycling Element, 2) a Household Hazardous Waste Element, 3) A Nondisposal Facility Element, and 4) a Countywide Siting Element (CSE). The County was required to prepare a CSE that demonstrates a remaining disposal capacity of at least 15 years to serve all the jurisdictions within the County.

The San Diego region diverted 55% of its solid waste in 2006 (the most recent reporting year). Unincorporated San Diego County, which includes Jamul, diverted 54% of its solid waste in 2006. Both of these diversion rates are above the mandatory 50% diversion rate required by AB 939 (California Integrated Waste Management Board, 2011).

4.9.3.2 Local Solid Waste Collection and Disposal

Waste Management, Inc. provides solid waste collection in the Jamul area. Weekly residential and commercial trash pick-up service is provided, and the collected waste is hauled to the Otay landfill and the Sycamore landfill. The Jones Disposal Company (a subsidiary of Waste Management, Inc.) currently provides solid waste service to the Reservation. The Reservation's solid waste is currently shipped to a transfer station in El Cajon, where recyclable materials are removed, and the remaining waste is sent to the

Otay Landfill or the Sycamore Sanitary Landfill . These Class III landfills are owned and operated by Universal Refuse Removal (a subsidiary of Waste Management, Inc.) (Allvarez, 2011).

The transfer station is located in the City of El Cajon, and can handle a throughput of 2,000 tons of solid waste per day. The transfer station currently receives about 1,500 tons of solid waste per day (San Diego County, 2008). The Otay Landfill, located in the City of Chula Vista, began operations in 1963 and was last expanded in 2001 to increase capacity of solid waste received from 3,800 to 5,830 tons per day. The approximate life expectancy of the Otay Landfill would be 2021, when it is expected to reach capacity. The Sycamore Sanitary Landfill, located in the City of San Diego, has a permitted maximum capacity of 3,965 tons per day. The approximate life expectancy of the Sycamore Sanitary Landfill would be 2031, when it is expected to reach capacity (CIWMB, 2002a; CalRecycle, 2011a,b).

4.9.4 ELECTRICITY, NATURAL GAS, AND TELECOMMUNICATION

Electricity is supplied by the San Diego Gas and Electric Company (SDG&E). SDG&E serves the Jamul area through one circuit via 12 kilovolt above ground power lines along SR-94. This circuit at the Reservation is rated to carry approximately 10 megawatts.

There is no natural gas service to the Reservation or the surrounding area. The nearest gas line is approximately six miles northwest of the Reservation (Spiedel, 2011). Residences in the Jamul region have individual propane storage tanks, serviced by private propane distribution companies.

AT&T provides all basic telecommunications services to the Jamul area. AT&T currently has above ground phone lines along SR-94, which provides service to the homes in the area. Cox communications provides cable TV to the Jamul area.

4.9.5 PUBLIC HEALTH AND SAFETY

The San Diego County Sheriff's Department is the chief law enforcement agency in the County. The Sheriff's Department is comprised of approximately 4,000 employees, both sworn officers and professional support staff. The Sheriff's Department provides general law enforcement and jail functions in a service area of approximately 4,200 square miles. In addition, the Sheriff's Department provides specialized regional services to the entire County, whether they are needed in incorporated cities within the County or in the unincorporated areas not serviced by a city law enforcement agency (San Diego County Sheriff's Department 2011).

The Law Enforcement Services Bureau of the Sheriff's Department employs 1,317 personnel (Barletta 2011), of which 782 are deputy sheriffs. The Bureau handles law enforcement services in both the unincorporated area of the County and the nine cities that contract for law enforcement services with the Department. Barletta (2011) estimated that the population directly served by the Sheriff's Department in 2011 was approximately 889,900 people; therefore, the Department provides 1 deputy for every 1,137 people. The deputy sheriffs are assigned to patrol, traffic, detective and other necessary support functions.

The San Diego County Sheriff's Department provides general public safety and law enforcement service for the area of the Reservation. The services would be provided from the Lemon Grove Station, with jurisdiction over the Lemon Grove Command Area. That station provides service to a portion of the unincorporated area (115,000 people) and as well as to the City of Lemon Grove (25,000 people). The Jamul/Dulzura communities contain approximately 168 square miles and have a combined population of 10,159 citizens. The Jamul area currently consists of nine beat areas and is patrolled twenty-four hours a day by a one-person patrol unit from the Lemon Grove Station. The southern portion of the town of Jamul is designated Beat # 631 and the Reservation is designated a separate beat—Beat #635 (Porath, 2011). The average response time to calls within Beat 631 during fiscal year 2010/2011 was 17.4 minutes for priority calls and 66.7 minutes for non-priority calls. The statistics for Beat #635 are almost identical (Porath, 2011).

The California Highway Patrol is the chief law enforcement agency for traffic related issues on public highways and roads leading up to the Reservation area. The station that services the Jamul area is located in the City of El Cajon. The El Cajon Station serves an extensive region of San Diego County from the border of the incorporated areas of the City of San Diego, El Cajon, Santee and Poway east to the northeastern, eastern, and southern borders of the County. Approximately 93 officers serve this area; 11 of these officers are on special duty, and 17 officers are in resident post in remote locations of the County including Julian, Ramona, Borrego Springs, and Jacumba. This leaves approximately 65 officers over three shifts to patrol this area. Actual staffing is more accurately placed at 55-60 officers once officers on sick or injury leave are counted (Hagler 2003; Salacup 2011).

California is a Public Law 280 State that allows for state criminal law enforcement jurisdiction within the Reservation; however, this jurisdiction does not include regulatory civil law authority. Depending on the crime (pursuant to Public Law 280), U.S. Marshals may provide support in specified situations.

The California Department of Forestry and Fire Protection (CDF), under contract to the BIA, provides wildland fire protection and responds to all wildfires. The nearest CDF stations to the Reservation are located in Jamul, Dulzura, and El Cajon. Some of these stations are only staffed during what is known as the "fire season"—the months from May to October (Harris 2011). The staff provided at the CDF stations is set by the State of California.

The San Diego Rural Fire Protection District covers 720 square miles in the southeastern portion of San Diego County. The District consists of 14 stations that protect primarily residential areas, and responds to calls for fire and medical emergencies. The majority of responses are for medical emergencies. The fire stations consist of both paid and volunteer staff. The closest station to the Reservation is the Jamul Station, located on Highway 94 east of the Reservation. The Reservation currently receives fire protection from both the California Department of Forestry and the San Diego Rural Fire Protection District. The San Diego Rural Fire Protection District station typically provides first response to any fire within the Reservation. The new Jamul Fire Station allows for very quick emergency response times ranging from one to five minutes (Bowers, 2002; Harris, 2011).

Several hospitals within San Diego County provide medical services. The hospital nearest to the Reservation that would provide standard medical aid is Grossmont Hospital. The nearest hospitals to the site that would provide trauma care are: 1) Scripps Mercy Hospital, 2) UC San Diego Medical Center, and 3) Sharp Memorial Hospital (Chavez, 2011). People requiring emergency medical attention would have the option to be transported to any of these hospitals within the confines of San Diego County's triage system, in which patients are directed to the most appropriate facility based on illness or injury. The ambulance service provided in the area of the Reservation is a joint venture between the San Diego Rural Fire Protection District and American Medical Response; Mercy Air provides emergency air transportation (Bowers 2002; Harris 2011).

4.10 OTHER VALUES

The Other Values discussion of the 2003 Final EIS addressed Noise (3.10.1), Hazardous Materials (3.10.2), and Visual Resources (3.10.3). An update to each of these discussions, where needed, is presented below. It may be that some information contained below is the same as presented in the 2003 Final EIS because environmental circumstances remain unchanged.

4.10.1 NOISE

4.10.1.1 Definition of Terms

Noise is generally defined as unwanted or objectionable sound. The effects of noise on people can include general annoyance, interference with speech communication, sleep disturbance, and in the extreme, hearing impairment. The unit of measurement used to describe a noise level is the decibel (dB). Decibels are measured on a logarithmic scale that quantifies sound intensity in a manner similar to the Richter scale used for earthquake magnitudes. Thus, a doubling of the energy of a noise source, such as doubling of traffic volume, would increase the noise level by 3 dB; a halving of the energy would result in a 3 dB decrease. The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, a method called “A-weighting” is used to filter noise frequencies that are not audible to the human ear. The A-scale approximates the frequency response of the average young ear when listening to most ordinary everyday sounds. When people make relative judgments of the loudness or annoyance of a sound, their judgments correlate well with the A-scale sound levels of those sounds. Therefore, the “A-weighted” noise scale is used for measurements and standards involving the human perception of noise. In this report, all noise levels are A-weighted and “dBA” is understood to identify the A-weighted decibel.

Average noise levels over a period of minutes or hours are usually expressed as dBA Leq, or the equivalent noise level for that period. The period of time average may be specified; Leq(8) would be a 8-hour average; when no period is specified, a 1-hour average is assumed.

The Community Noise Equivalent Level (CNEL) is the 24 hour A-weighted average for sound, with corrections for evening and nighttime hours. The corrections require an addition of 5 decibels to sound levels in the evening hours between 7 p.m. and 10 p.m. and an addition of 10 decibels to sound levels at nighttime hours between 10 p.m. and 7 a.m. These additions are made to account for the increased sensitivity during the evening and nighttime hours when sound appears louder.

Human perception of noise has no simple correlation with acoustical energy. The perception of noise is not linear in terms of dBA or in terms of acoustical energy. Two noise sources do not sound twice as loud as one source. It is widely accepted that the average healthy ear can barely perceive changes of 3 dBA, increase or decrease; that a change of 5 dBA is readily perceptible; and that an increase (decrease) of 10 dBA sounds twice (half) as loud (Caltrans 2009). **Table 4-20** provides examples of common activities and the sound levels associated with those activities.

**TABLE 4-20
TYPICAL NOISE LEVELS**

COMMON OUTDOOR ACTIVITIES	NOISE LEVEL (dBA)	COMMON INDOOR ACTIVITIES
	110	Rock Band
Jet Fly-over at 300 m (1,000 ft)	100	
Gas Lawn Mower at 1 m (3 ft)	90	
Diesel Truck at 15 m (50 ft), at 80 km/hr (50 mph)	80	Food Blender at 1 m (3 ft) Garbage Disposal at 1 m (3 ft)
Noisy Urban Area, Daytime Gas Lawn Mower, 30 m (100 ft)	70	Vacuum Cleaner at 3 m (10 ft)
Commercial Area Heavy Traffic at 90 m (300 ft)	60	Normal Speech at 1 m (3 ft)
Quiet Urban Daytime	50	Large Business Office Dishwasher in Next Room
Quiet Urban Nighttime	40	Theater, Large Conference Room (Background)
Quiet Suburban Nighttime	30	Library
Quiet Rural Nighttime	20	Bedroom at Night, Concert Hall (Background)
	10	Broadcast/Recording Studio
Lowest Threshold of Human Hearing	0	Lowest Threshold of Human Hearing
SOURCE: Caltrans, 2009		

From the source to the receiver, noise changes both in level and frequency spectrum. The most obvious change is the decrease in noise as the distance from the source increases. The manner in which noise reduces with distance depends on the following important factors: ground absorption, atmospheric effects and refraction, shielding by natural and man-made features, noise barriers, diffraction and reflection. For a point noise source, such as construction equipment, the attenuation or drop-off in noise level would be 6 to 7.5 dBA for each doubling of unobstructed distance between the source and the receiver. For a line noise source, such as vehicles traveling on a roadway, the attenuation or drop-off in noise level would be approximately 3 to 4.5 dBA for each doubling of unobstructed distance between the source and the receiver.

A large object in the path between a noise source and a receiver can significantly attenuate noise levels at that receiver. The amount of attenuation provided by this “shielding” depends on the size of the object and the frequencies of the noise levels. Natural terrain features, such as hills and dense vegetation, as well as man-made features, such as buildings and walls, can significantly alter noise levels. Walls or berms are often specifically used to reduce, or attenuate, noise.

4.10.1.2 Gaming Facility Project Area

The Gaming Facility project site is currently under construction. A portion of the Reservation west of the Gaming Facility project site is occupied by a church and cemetery. The vicinity of the Reservation is developed mostly with residential, agricultural, and open space land uses. The Gaming Facility project site is bordered on the south and west by undeveloped land and on the east by SR-94. North of the Gaming Facility project site is partially developed and the remainder of the area is undeveloped.

Land surrounding the Gaming Facility project site is zoned A72 (Agriculture) and S88 (Specific Plan), which both allow for residential uses. The corresponding exterior noise level limits specified by the noise ordinance in **Table 4-21** are 50 dBA L_{eq} from 7 a.m. to 10 p.m., and 45 dBA L_{eq} from 10 p.m. to 7 a.m.

4.10.1.3 Sensitive Noise Receptors

Noise sensitive receptors are generally considered humans engaged in activities, or utilizing land uses, that may be subject to the stress of significant interference from noise. Activities usually associated with sensitive receptors include, but are not limited to, talking, reading, and sleeping. Land uses often associated with sensitive receptors include residential dwellings, mobile homes, hotels, motels, hospitals, nursing homes, education facilities, and libraries.

**TABLE 4-21
SOUND LEVEL LIMITS**

COUNTY ZONE	APPLICABLE HOURS	SOUND LEVEL LIMIT Db (1HR)
R-S, R-D, R-R, R-MH, A-70, A-72, S- 80, S-81, S-87, S-90, S-92, and R-V and R-U with a density of less than 11 dwelling units per acre.	7 a.m. to 10 p.m.	50
	10 p.m. to 7 a.m.	45
R-RO, R-C, R-M, S-86, V5, and R-V and R-U with a density of 11 or more dwelling units per acre.	7 a.m. to 10 p.m.	55
	10 p.m. to 7 a.m.	50
S-94, V4 and all other commercial zones.	7 a.m. to 10 p.m.	60
	10 p.m. to 7 a.m.	55
V1, V2	7 a.m. to 10 p.m.	60
V1, V2	7 p.m. to 10 p.m.	55
V1	10 p.m. to 7 a.m.	55
V2	10 p.m. to 7 a.m.	50
V3	7 a.m. to 10 p.m.	70
	10 p.m. to 7 a.m.	65
M-50, M-52, and M-54	Anytime	70
S-82, M-56 and M-58	Anytime	75
S-88 (see subsection (c) below)		
<p>(a) If the measured ambient level exceeds the applicable limit noted above, the allowable 1-hour average sound level shall be the ambient noise level, plus 3 decibels. The ambient noise level shall be measured when the alleged noise violation source is not operating</p> <p>(b) The sound level limit at a location on a boundary between two (2) zoning districts is the arithmetic mean of the respective limits for the two zones; provided, however, that the 1-hour average sound level limit applicable to extractive industries, including but not limited to borrow pits and mines, shall be 75 decibels at the property line regardless of the zone where the extractive industry is actually located.</p> <p>(c) S88 zones are Specific Planning Areas which allow for different uses. The sound level limits in Table 36.404 above that apply in an S88 zone depend on the use being made of the property. The limits in Table 36.404, subsection (1) apply to property with a residential, agricultural or civic use. The limits in subsection (3) apply to property with a commercial use. The limits in subsection (5) apply to property with an industrial use that would only be allowed in an M50, M52 or M54 zone. The limits in subsection (6) apply to all property with an extractive use or a use that would only be allowed in an M56 or M58 zone.</p> <p>(d) A fixed-location public utility distribution or transmission facility located on or adjacent to a property line shall be subject to the sound level limits of this section, measured at or beyond 6 feet from the boundary of the easement upon which the facility is located.</p> <p>SOURCE: County of San Diego Noise Ordinance, Section 36.404 (County of San Diego 2009); L_{dn} 2011</p>		

Existing noise sensitive human receptors in the Reservation vicinity would include the existing fire station and the residential land uses located to the north and east of the Reservation. The fire station is included as it is used similarly to a residence with sleeping and outdoor recreation activities. The nearest potential noise sensitive receptor is the fire station located east of SR-94 approximately 440 feet north of the Reservation. The nearest existing residential land uses are located north and east of the Gaming Facility project site approximately 1,400 feet.

4.10.1.4 Existing Noise Levels

Existing noise level measurements were conducted between the hours of 3:15 p.m. and 4:30 p.m. on September 29, 2010. Noise measurements were taken with a Larson Davis Model 820, Type 1 sound level meter set on “slow” response and “A-weighting.” The meter was positioned 5 feet above the existing ground elevation at all measurement locations. The sound level meter was calibrated before and after the monitoring using a Larson-Davis calibrator, Model CAL 200.

Noise locations are shown on **Figure 4-12**. Locations 2, 3, 4, and 5 are located in close proximity to the nearest noise sensitive receptors to the Gaming Facility project site. Location 1 is located at a similar location as the nearest point of the Reservation to SR-94 and is representative of the existing on-site noise conditions. The background noise level ranges are based on L_{90} measurements for each location. L_{90} measurements represent the noise level value that is exceeded at least 90 percent of the time during the course of measurement. A summary of the noise measurements taken at the seven locations is provided in **Table 4-22**.

**TABLE 4-22
NOISE MEASUREMENTS**

SITE ID ₁	LOCATION	DATE TIME	L_{eq} (dBA)	L_{max} (dB A)	L_{min} (dBA)	L_{90} (dBA)	NOISE SOURCES
1	North of Gaming Facility project site, 50 feet west of SR-94	3:19 PM	66.2	83.4	39.6	52.1	Traffic on SR-94, activity at fire station, aircraft
2	East of Gaming Facility project site, 75 feet from edge of SR-94	4:23 PM	62.4	75.6	40.7	47	Traffic on SR-94, aircraft
3	North of Melody Rd., 110 feet east of SR-94	3:30 PM	61.7	70.3	37.7	51	Traffic on SR-94, aircraft
4	50 feet North of Melody Rd., west of SR-94	3:05 PM	56.6	71	37.3	45.2	Traffic on SR-94 and Melody Rd., aircraft
5	North of Las Palmas Rd., 220 feet east of SR-94	4:00 PM	59.8	73.2	41.8	48	Traffic on SR-94, aircraft

1/ The Site ID corresponds to locations shown in **Figure 4-12**
SOURCE: Ldn Consulting, 2011

As the table shows, the primary existing noise source near the Gaming Facility project site is vehicular traffic on SR-94. Thus, the highest noise levels occur in close proximity to SR-94. Additional existing background noise is associated with traffic on local roads and aircraft flying over the area. Based on the measurements at location 1 and 2, on-site background noise levels are estimated to range from 47 to 52 dBA L_{90} . Off-site background noise levels in the vicinity were measured between 45 dBA L_{90} and 51 dBA L_{90} .

4.10.2 HAZARDOUS MATERIALS

4.10.2.1 Current Conditions and Land Use

The construction of the Gaming Facility is currently taking place on the Reservation. In addition, the Reservation contains a pre-fabricated building used for tribal administrative purposes and a recently-constructed community center. Previously, the Reservation had approximately 15 residences (pre-fabricated structures). Propane gas for cooking and heating was stored in above-ground storage tanks that have since been removed. Surrounding uses include: to the south, the Rancho Jamul Ecological Reserve and the Hollenbeck Canyon Wildlife Area, and private rangeland and large residential estates; to the north, the 4-acre parcel (former fire station), the 87-acre parcel (used as cattle pasture), and residential subdivisions and the town of Jamul; to the east, Highway 94, the new fire station, residential subdivisions (Peaceful Valley Ranch Estates), and hayfields; and to the west, cattle pasture and private estates. All fuel storage tanks associated with the old fire station have been removed under permit. The 10-acre parcel north of Melody Road has a defunct orchard and irrigation system, including 2 wells and a pump in a cistern.

4.10.2.2 Previous Environmental Site Assessments

The following environmental site assessments analyzed parcels that included the entirety of, or portions of, the Gaming Facility project area:

Level I Survey – 2002

A Level I Survey was conducted for the Jamul Gaming Facility Project development area in 2000 by ESA Inc. for Jamul Indian Village Environmental Assessment (BIA 2001), and updated by Analytical Environmental Services Inc. in 2002 for the Jamul Indian Village Environmental Impact Statement (BIA 2003). These previous assessment areas consisted of an adjacent 87-acre parcel (owned by Lakes Entertainment), 4-acre parcel (adjacent parcel owned by JIV), 10-acre parcel located at the northwest corner of SR-94 and Melody Road (owned by Lakes Entertainment), and JIV, which were all part of a previous fee-to-trust request made by JIV to the BIA. The surveys included a

contaminant survey checklist, field reconnaissance, and database queries by EDR, in accordance with the ASTM Standard Practice for Environmental Site Assessments E 1527-13 and the Bureau of Indian Affairs guidelines. Existing hazardous materials usage was reported as follows:

“Minor quantities of household debris (consisting of paper refuse, glass bottles, aluminum cans, etc.) were observed to be scattered along the eastern edge of the project area (along Highway 94), at the northern end of the project area (along Melody Road), and around the southern end of the project area (along the un-named dirt road near the fire station, residential area and cemetery). Such trash is typical of vacant land located near major roadways. Discarded chemical products or drums were not observed on the subject Study Area. Each of the 15 residential structures [within JIV] has a five-hundred-gallon propane tank associated with it. (BIA 2003)”

The report concluded that no recognized environmental conditions existed at the site other than *de minimis* (i.e., insignificant) conditions such as roadside litter. No further investigation was recommended.

Level I Hazardous Materials Assessment – 2007

In 2007, a Level I hazardous materials assessment was conducted by Natural Investigations Co. (2007) of the current Reservation area and portions of adjacent parcels. The hazards/hazardous materials assessment consisted of a field reconnaissance, database queries, and impact analysis. The field survey detected no significant environmental conditions other than *de minimis* quantities of trash. Database searches produced no reported sites within the Reservation area or immediate vicinity, except licensed use of fuel storage tanks by the Jamul fire station and household propane usage.

Level I Hazardous Materials Assessment – 2009

A follow-up Level I hazardous materials assessment was conducted for the Jamul Gaming Facility Project by Natural Investigations Co. in 2009. This assessment included a database query and field reconnaissance to update previous assessments, and to survey areas that were not previously surveyed. Since the previous survey was completed, the homes and buildings on the Reservation have been removed, and the fire station on the 4-acre parcel was removed and relocated across SR-94, and roadway improvements were made on the Reservation and the 4-acre parcel.

Phase I Environmental Site Assessment for the Jamul Indian Village Gaming Project and Access Project – 2012

The Study Area consisted primarily of 3 parcels—the 87-acre parcel, the 4-acre parcel, and the 10-acre parcel, but also the Caltrans right-of-way corridor of SR-94 and associated driveways. It was Natural Investigations Company's opinion that there are no historic recognized environmental conditions and no current recognized environmental conditions in connection with the Study Area pursuant to the ASTM Practice E 1527-13. Records review, database searches, or interviews failed to identify any environmental conditions in connection with the Study Area other than *de minimis* disposal of solid waste onto the Study Area. No further site investigation was recommended. Two common hazards were noted: portions of the Study Area may be located within a 100-year or 500-year floodplain, and the Study Area contains dense, dry vegetation that may fuel wildfire, and the region is prone to wildfires.

Site reconnaissance of the Gaming Facility was conducted in 2010 and 2011. All accessible portions of the Study Area were observed by a pedestrian survey; adjoining properties were observed primarily by binocular or windshield (automobile) survey. Roads within the Access Option project area are unpaved gravel roads or are paved with asphalt or concrete, and show no suspicious staining. Minor quantities of household debris (consisting of paper refuse, glass bottles, aluminum cans, etc.) were observed to be scattered along the SR-94 right-of-way, in the stream corridor, and other parcels within the Access Option project area. Discarded chemical product containers or drums were not observed within the Access Option project area. No hazardous substances or petroleum product usage or storage were noted within the Access Option project area during the site reconnaissance, other than the former above-ground storage tank concrete pad associated with the former fire station on the 4-acre parcel. The former fire station used two fuel underground storage tanks (USTs) until 1986, then excavated the USTs and installed two aboveground storage tanks (ASTs). These ASTs were relocated when the fire station was relocated circa 2006-2007. No staining of the concrete pads or surrounding pavement was evident during the site reconnaissance. The fire station employed a septic system, and it is not known if the septic tanks were removed or left in place. No poly-chlorinated biphenyl (PCB)-containing equipment (electric or hydraulic) was observed during the site reconnaissance (Final TEE, Appendix 8).

Phase 1 Environmental Site Assessment for the Access Alternatives: State Route 94 Improvement Project – 2014 (Appendix 5)

The study area consisted of all access road options being considered by Caltrans. The focal properties of this assessment included portions of the 87-acre parcel, the 4-acre

parcel, and the 10-acre parcel—as well as the affected portions of the Caltrans right-of-way corridor of State Route 94 from 1/4-mile north of Melody Road to 1/2 mile south of the Reservation, Melody Road, and the frontage and driveways of other affected parcels. No environmental liens or value reductions were found in association with the study area. No indication of heavy industrial uses was detected from title review. The Property was not listed in any of the environmental databases queried. A review of physical setting sources and historical use information (topographic maps, aerial photography, fire insurance maps, city directories, and building permits) did not detect any indications of possible recognized environmental conditions within the Study Area. Site reconnaissance was performed on May 15, 2013; no indications of possible recognized environmental conditions were noted on the Property. On May 15, 2013, the environmental assessor met with Caltrans staff: no indications of possible recognized environmental conditions were uncovered.

4.10.2.3 Regulatory Setting

The primary federal laws regulating hazardous wastes/materials are the Resource Conservation and Recovery Act of 1976 (RCRA) and the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA). The purpose of CERCLA, often referred to as Superfund, is to clean up contaminated sites so that public health and welfare are not compromised. RCRA provides for "cradle to grave" regulation of hazardous wastes. Other federal laws include: Community Environmental Response Facilitation Act (CERFA) of 1992; CWA; CAA; Safe Drinking Water Act; Occupational Safety and Health Act (OSHA); Atomic Energy Act; Toxic Substances Control Act (TSCA); and Federal Insecticide, Fungicide, and Rodenticide Act (FIFRA).

In addition to the acts listed above, EO 12088, Federal Compliance with Pollution Control, mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

Hazardous waste in California is regulated primarily under the authority of the federal Resource Conservation and Recovery Act of 1976, and the California Health and Safety Code. Other California laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup and emergency planning.

Federal Regulatory Requirements

Resource Conservation and Recovery Act of 1976 [42 U.S.C. §6901 et seq.].
Regulation of the identification, generation, transportation, storage, treatment, and disposal of hazardous materials and hazardous wastes.

Comprehensive Environmental Response, Compensation and Liability Act of 1980. Regulation of former and newly discovered uncontrolled waste disposal and spill sites. Established the National Priorities List of contaminated sites, and the "Superfund" cleanup program.

Clean Water Act. Regulation of discharges and spills of pollutants, including hazardous materials, to surface waters and groundwater.

Safe Drinking Water Act. Regulation of discharges of pollutants to groundwater and aquifers.

Toxic Substances Control Act. Regulation of manufacturing, inventory, and disposition of industrial chemicals including hazardous materials.

Federal Insecticide, Fungicide & Rodenticide Act. Regulation of the manufacturing, distribution, sale, and use of pesticides.

Hazardous Materials Transportation Act. Regulation of the transport of hazardous materials by motor vehicles, marine vessels, and aircraft.

Emergency Planning & Community Right To Know Act [40 C.F.R. Parts 350 to 372]. Regulation of facilities that use hazardous materials in quantities that require reporting to emergency response officials.

Executive Order 12088, Federal Compliance with Pollution Control. Mandates that necessary actions be taken to prevent and control environmental pollution when federal activities or federal facilities are involved.

State Regulatory Requirements

Porter-Cologne Water Quality Act. Regulates water quality through the State Water Resources Control Board and Regional Water Quality Control Boards, including oversight of water monitoring and contamination cleanup and abatement.

Hazardous Materials Release Response Plans and Inventory Law. Requires facilities using hazardous materials to prepare hazardous materials inventories and business plans.

Hazardous Waste Control Act. Similar to Resource Conservation and Recovery Act on the federal level in regulating the identification, generation, transportation, storage and disposal of materials deemed hazardous by the State of California.

Safe Drinking Water & Toxic Enforcement Act [Proposition 65]. Similar to the Safe Drinking Water Act and CWA on the federal level in regulating the discharge of contaminants to groundwater.

California Government Code §65962.5. Requires the Department of Toxic Substances Control to compile and maintain lists of potentially contaminated sites located throughout the State of California (includes the Hazardous Waste and Substances Sites List known as "Cortese").

4.10.3 VISUAL RESOURCES

4.10.3.1 Regional Context

The Reservation is located in southwestern San Diego County approximately 15 miles east of the center of the City of San Diego, and approximately one mile south of the community of Jamul. The Reservation lies on moderately steep slopes in the Jamul Mountains, which surround the site on all sides. SR-94 transects the region on its course between Interstate 5 in the City of San Diego, and Interstate 8 near the community of Manzanita in eastern San Diego County. SR-94 passes through a number of distinct viewsheds, separated from each other by the mountainous topography of the region.

4.10.3.2 Area Viewshed

The Reservation is located in a rural area of San Diego County at the southeastern edge of the unincorporated community of Jamul. Within the vicinity of the Reservation, SR-94 is a two-lane undivided highway lined with fence posts and utility posts. Natural terrain consists of sparsely vegetated rocky hillsides with tree-lined drainages, interrupted by vegetated rural residential lots. Due to rolling terrain and curves within the Reservation area, views along SR-94 range from distant views of hills with a mountainous backdrop to views with lines of sight obscured by hillsides and vegetation.

The visual character of the viewshed is mainly influenced by topography and surrounding land uses that shape local viewing corridors to and from the Reservation. The topography of the area generally ranges from approximately 870 feet to 960 feet above mean sea level. For the purpose of this analysis, the maximum current elevation is used to generalize the Reservation's range of visibility. The area slopes downward from the east and west towards the intermittent drainage that transects the Reservation. Surrounding land uses are largely rural and semi-rural in nature. Undeveloped lands immediately surround the Reservation site. Approximately one mile north of the Reservation is the town of Jamul. Land uses between the town center and the Reservation consist of scattered housing and small businesses. Peaceful Valley Ranch

is a 57 lot residential development located northeast of the Reservation, which was approved by the County in 2008. Rancho Jamul Estates, a low-density residential development, is located 0.7 miles southeast of Reservation Road.

The area viewshed is comprised of three viewing corridors, or *vistas*. Each of these vistas provides a line-of-sight that can be characterized uniquely from among the other vistas. **Vista A** is the line-of-sight corridor between the residences north and east of the Reservation and to the south of the Reservation. As such, it is classified a *residential vista*. **Vista B** is the line-of-sight between the Reservation and the portion of Melody Road north of the site, extending approximately 1,000 feet west and 1,000 feet east of SR-94. Vista B is classified as a *Melody Road commuter vista*. **Vista C** is a commuter vista that includes a portion of SR-94 and a portion of Peaceful Valley Ranch Road, just east of the site.

The portion of SR-94 within the Vista C is a segment approximately 2,000 feet long, beginning on its north end approximately 500 feet north of Melody Road and ending approximately 300 feet south of Peaceful Valley Road. The portion of Peaceful Valley Road within Vista C extends approximately 500 feet east of SR-94. No roads or residences occur within view south of the Reservation; therefore, nothing south of the Reservation is considered for analysis in this viewshed. Topography is the most influential characteristic of the regional viewshed, and its role in delineating the vistas introduced here is explained in detailed discussion of each vista, below.

Vista A – Residential Vista

Vista A is a residential vista, experienced by residents to the north and east of the Reservation. The view from the residences is generally framed by near and distant topography, with sage scrub dominating the view until the vegetation transitions into a band of live oak along the margins of the drainage that bisects the Gaming Facility project site. The topography on and off site offers a sustained, variable partial view of the site to approximately 12 residences within this vista. Viewers are all topographically up-grade of the site, and removed from the site by approximately 1,400 feet to approximately 2,600 feet northwest of the site, by approximately 1,200 to 2,000 feet northeast of the site, and by approximately 1,800 feet east of the site.

Vista B – Melody Road Commuter Vista

Vista B is a commuter vista generally providing access between SR-94 and the residential areas to the east and to the west of SR-94. On westbound Melody Road, the view to the Gaming Facility project site begins at the origin of the Road itself, approximately 1,000 feet east of SR-94. Development along this portion of Melody Road is sparse, and westbound vehicular use is correspondingly limited. The western portion

of the Gaming Facility project site appears downgrade and to the left, approximately 2,100 feet distant and against a backdrop comprised mainly of mountains. The general view is framed by rural and semi-rural land uses and sage scrub chaparral. A more complete view of the Gaming Facility project site occurs as the commuter progresses westward. Approximately 250 feet east of SR-94, the Gaming Facility project site is directly to the left of the commuter until westward transition places the Gaming Facility project site out of forward-oriented view at the commuter's left flank. Turning either left or right onto SR-94 removes the commuter from this vista. The SR-94 commuter vista is described below. Though the duration of the Vista B view is reliant upon traffic conditions, a westbound commuter traveling within this vista at 30 miles per hour (MPH) would experience the view to the Gaming Facility project site for approximately half a minute.

On eastbound Melody Road, the view to the Gaming Facility project site begins approximately 1,000 feet west of SR-94. Residential development is more intensive along this portion of Melody Road than on the westbound portion east of SR-94, which offers a commuter view to local residents outside of the residential vista described above. The eastern portion of the Gaming Facility project site appears downgrade and to the right, approximately 2,500 feet in distance, and against a backdrop that includes mountainous terrain and SR-94 as it undulates in and out of view in its intercourse with the foreground topography. The view to the Gaming Facility project site becomes more complete as the commuter progresses east, until it is directly to the right, approximately 1,200 feet removed when the commuter is approximately 250 feet east of SR-94. Progressing eastward on Melody Road, the Gaming Facility project site is removed from forward-oriented view at the commuter's right flank. Turning either left or right onto SR-94 removes the commuter from this vista, as described above, as the commuter enters the SR-94 commuter vista. Though the duration of this view is reliant upon traffic conditions, an eastbound commuter traveling within this vista would experience the view to the Gaming Facility project site for approximately half a minute.

Vista C – SR-94 Commuter Vista

Vista C is a commuter vista, oriented to the eastern side of the Gaming Facility project site along a portion of SR-94 approximately 2,000 feet long. The vista segment extends from just east of the Gaming Facility project site, to approximately 500 feet north of Melody Road, and includes approximately 500 feet along Peaceful Valley Road from its connection with SR-94. There is significantly more local development along SR-94 north of the Gaming Facility project site than south of the Gaming Facility project site, although a residential community served by Rancho Jamul Drive, adjoining SR-94 approximately 0.7 miles south of the Gaming Facility project site, would also be a source of passing residential traffic. The southbound route of SR-94 also provides access to the U.S.-

Mexico border at Tecate, Mexico. It is therefore anticipated that a moderate flow of commercial traffic passing the Gaming Facility project site would be more prevalent than for residential commuters except at AM and PM peak hours. Residential commuters are anticipated to mostly commute to and from the metropolitan San Diego area.

Southbound SR-94 commuters enter the vista approximately 500 feet north of Melody Road, with the Gaming Facility project site appearing directly forward, downgrade and approximately 1,900 feet distant. After crossing Melody Road, SR-94 curves approximately 40 degrees to the left, thereafter winding slightly to the right in its intercourse with the hilly terrain. The Gaming Facility project site is at the commuter's right quarter for this segment, which continues for approximately 1,000 feet, where SR-94 curves to the left approximately 10 degrees on a downgrade, placing the Gaming Facility project site from 400 feet to 250 feet away, directly to the right, for a distance of approximately 850 feet until the Gaming Facility project site disappears from view behind the local terrain. While the duration of visibility is reliant upon traffic conditions in a commuter vista, a commuter traveling through this vista at 60 MPH would experience this view for approximately 30 seconds.

The northbound view presents the Gaming Facility project site as it emerges from behind the terrain and into view directly on the left hand side at approximately 250 feet of distance, flanked by live oak and sage scrub chaparral against a mountain backdrop. Continuing northbound within the vista, the point of view is elevated due to the localized vertical curvature of SR-94, and the view to the left opens up to emphasize the mountainous backdrop, as the foreground appears to descend from view. SR-94 enters a gradual curve to the left here, and as a result the Gaming Facility project site remains directly to the left for approximately 850 feet, until SR-94 curves to the right approximately 10 degrees, and the Gaming Facility project site is removed from forward-oriented view at the commuter's left flank. While the duration of visibility is reliant upon traffic conditions, a northbound SR-94 commuter traveling at 60 MPH experiences this view for approximately 16 seconds.

Peaceful Valley Road adjoins SR-94 directly north of the Gaming Facility project site, providing SR-94 access to approximately 4 households. Westbound commuters enter the vista approximately 500 feet east of SR-94 after passing occluding terrain features. Upon reaching the intersection with SR-94, the Gaming Facility project site appears directly forward at similar elevation, and approximately 400 feet distant. It is partially occluded by terrain, with mountains in the background and SR-94 directly in the foreground. The Gaming Facility project site disappears from view at the commuter's left flank after turning right onto SR-94 and progressing for approximately 350 feet. For left-turning commuters, the Gaming Facility project site comes directly to a right side view, and remains in view for approximately 500 feet before disappearing behind local terrain

features. While duration of visibility is reliant upon traffic conditions, deceleration and stopping time, the cumulative duration of visibility for right-turning commuters from Peaceful Valley Road is expected to be approximately 30 seconds, while left-turning commuters may experience visibility for approximately 35 seconds.

4.10.3.3 Access Road Options Setting

The project footprint for Option 1 (Improve Reservation Road) and Option 2 (Improve Daisy Drive) lies primarily within the SR-94 corridor described above. Approximately half of the footprint for Option 3 (New Access Road from Melody Road) is located within the highway corridor. The other half of the Option 3 footprint is located within an undeveloped 87-acre parcel of land located between Melody Road and the Reservation. The undeveloped 87-acre parcel contains natural habitat (riparian, non-native grasslands and a creek) and a topographic rise from east-to-west. Past use of this parcel has been for cattle grazing.

4.10.3.4 Regulatory Setting

Land use on the Reservation is regulated and guided by the JIV Council, the governing body of the JIV Government. Land use planning for land adjacent to the Reservation is guided by the County of San Diego General Plan Update and the Jamul-Dulzura Subregional Plan (Subregional Plan), a part of the San Diego County General Plan Update. The General Plan contains a Visual Resources section that addresses landscape/setting, scenic corridors, and astronomical dark skies. The Jamul/Dulzura Subregional Plan contains conservation, scenic highway and resource conservation chapters that address aesthetics and visual quality. Although JIV is not regulated by County policies, updated goals/policies from the County are presented below for informational purposes.

County of San Diego General Plan Update

The Conservation and Open Space Element (COSE) of the County's General Plan Update contains goals and policies related to landscape/setting, scenic corridors, and astronomical dark skies. The General Plan points out that the County has three distinctive geographic regions, listed from west to east: (1) low-lying coastal plain, (2) mountainous peninsular range, and (3) desert salton (Imperial) basin. The General Plan states that the diversity of these regions provides the residents/visitors with an array of natural vistas and scenic environments that provide a unique collection from the ocean to the desert.

The COSE addresses two aspects of scenic highways within the scenic corridor discussion: (1) County designated and (2) State designated. For County designated

segments, the General Plan Update states that “A “scenic highway” can pertain to any freeway, highway, road or other vehicular right-of-way along a corridor with considerable or otherwise scenic landscape”. For State Scenic Highways, highways that are officially designated as scenic or eligible for designation are considered “State Scenic Highways” by the County. SR-94 is not designated as a State Designated Scenic Highway. SR-94 from Interstate 8 to SR 125, inclusive of the segment traveling past the Reservation, is designated as a County Scenic Highway.

The astronomical dark sky discussion lists two sites within the County that meet five criteria for high-quality observatory locations: (1) Palomar and (2) Mount Laguna Observatories. Palomar Observatory is located 5,500 feet at the top of Palomar Mountain approximately 76.2 miles from the Reservation in northern San Diego County near Palomar Mountain State Park. The Mount Laguna Observatory is located at an altitude of 6,100 feet on the eastern edge of the Cleveland National Forest approximately 38.7 miles from the Reservation near the Anza-Borrego State Park, 45 miles east of downtown San Diego.

The County of San Diego General Plan Update goals and policies include the following:

Preservation of Scenic Resources:

Goal COS-1: Preservation of scenic resources, including vistas of important natural and unique features, where visual impacts of development are minimized.

Policy COS 11.1: Require the protection of scenic highways, corridors, regionally significant vistas, and natural features, including prominent ridgelines, dominant landforms, reservoirs, and scenic landscapes.

Policy COS 11.2: Promote the connection of regionally significant natural features, designated historic landmarks, and points of regional historic, visual, and cultural interest via designated scenic corridors, such as scenic highways and regional trails.

Policy COS 11.3: Require development within visually sensitive areas to minimize visual impacts and to preserve unique or special visual features, particularly in rural areas, through the following: (a) creative site planning, (b) integration of natural features into the project, (c) appropriate scale, materials, and design to complement the surrounding natural landscape, and (d) minimal disturbance of topography.

Dark Skies:

Goal COS-13: Preserved dark skies that contribute to rural character and are necessary for the local observatories.

Policy COS 13.1: Restrict outdoor light and glare from development projects in Semi-Rural and Rural Lands and designated rural communities to retain the quality of night skies by minimizing light pollution.

Policy COS 13.2: Minimize, to the maximum extent feasible, the impact of development on the dark skies surrounding Palomar and Mount Laguna observatories to maintain dark skies which are vital to these two world-class observatories by restricting exterior light sources within the impact areas of the observatories.

Policy COS 13.3: Coordinate with adjacent federal and State agencies, local jurisdictions, and tribal governments to retain the quality of night skies by minimizing light pollution.

Jamul/Dulzura Subregional Plan Update

The County updated the Subregional Plan in August 2011 as part of their General Plan Update process, and again amended the Subregional Plan in June 2014. The policies within the conservation and scenic highway chapter selectively amend and/or carry out the policies for the Visual Resources section of the Conservation and Open Space Element of the General Plan for the Jamul/Dulzura Subregion.

The following aesthetic Goals/Policies were adopted as part of this update process:

Mobility

Goal 1: Develop a transportation system that provides for safe, efficient travel throughout this rural community and preserves the beauty, quality, and rural character of the Jamul/Dulzura Subregional Planning area.

Policy 1: Road design within the community shall be compatible with topography and landscape and minimize grading. All road improvements shall be designed to maximize environmental and aesthetic considerations.

Policy 2: ...provide for the replacement of all healthy, mature trees lost during highway maintenance...

Policy 5: In order to keep the rural character of the community, it is important to retain the dark skies. Therefore, street lighting should be of the type as to reflect downward only. Such lighting, when required, should be located at street intersections, end of cul-de-sacs, and other locations as necessary for safety only.

Conservation:

Goal 5: Environmental resources in the Jamul/Dulzura area that are carefully managed to maintain them for future needs.

Policy 1: Require the preservation of diverse, viable natural habitats, and aesthetic resources, such as scenic rock outcroppings, ridge tops, and mountain peaks.

Policy 6: Standards should be developed for control over light pollution to preserve the dark sky characteristics of Jamul/Dulzura Subregion.

Scenic Highways:

Goal 6: The designation of a scenic highway system that provides attractive and scenic travel routes within the Jamul/Dulzura Subregional Area.

Policy 1: The scenic highway corridors in the Jamul/Dulzura Subregional Area designated in the County General Plan Conservation and Open Space Element include: SR-94, Lyons Valley Road, Skyline Truck Trail, Proctor Valley Road, Honey Springs, and Otay Lakes. In addition to these scenic highway corridors, Lawson Valley Road is a scenic corridor that is also important to the community.

Policy 2: The route identified above, and those identified in the Conservation and Open Space Element, should be protected by the application of a "S" Scenic designator.

Appendix A of the Jamul/Dulzura Subregional Plan identifies Resource Conservation Areas "requiring special attention to conserve resources in a manner best satisfying public and private objectives". Appropriate implementation actions identified by the County include the establishment of such measures as scenic or natural resource preservation overlay zones. Resource conservation areas include groundwater problem areas, coastal wetlands, native wildlife habitats, construction quality sand areas, littoral sand areas, astronomical dark sky areas, unique geological formations, and significant archaeological and historical sites.

The important resource conservation areas as defined by the Jamul/Dulzura Subregional plan includes the San Miguel/Jamul Mountains located to the southwest of the Reservation, Indian Springs located north of the Reservation, and Mother Miguel located west of the Reservation. The San Miguel/Jamul Mountains are recognized for the large number of rare and endangered plants, Indian Springs for the Riparian and Oak woodlands representing a part of the “character of Jamul”, and Mother Miguel for the outstanding Golden Eagle habitat and significant stands of the rare and endangered coast barrel cactus.

4.11 ENVIRONMENTAL JUSTICE

The Environmental Justice discussion of the 2003 Final EIS addressed Policy/Regulatory Considerations, Race and Income. An update to each of these discussions, where needed, is presented below. It may be that some information contained below is the same as presented in the 2003 Final EIS because environmental circumstances remain unchanged.

The U.S. EPA Office of Environmental Justice offers the following definition of environmental justice:

“The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. Fair treatment means that no group of people, including racial, ethnic, or socioeconomic group should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of Federal, state, local, and tribal programs and policies.”

The concept of environmental justice is rooted in the Civil Rights Act of 1964, which prohibited discrimination in Federally-assisted programs, and in EO 12898, “Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations,” issued February 11, 1994. Executive Order 12898 was intended to ensure that Federal actions and policies do not result in disproportionately high adverse effects on minority or low-income populations. It requires each Federal agency to incorporate environmental justice into its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects, including social or economic effects, of its programs, policies, and activities implemented both directly and indirectly (for which it provides permitting or funding) on minority populations and low-income populations of the United States (President’s Council on Environmental Quality 1997). Additional guidance from the President’s Council on Environmental Quality clarifies that environmental justice concerns may arise from effects on the natural

and physical environment that produce human health or ecological outcomes, or from adverse social or economic changes.

Environmental justice issues are mandated and regulated at the Federal level, and compliance with NEPA requires analysis of environmental justice effects. As such, environmental justice is considered part of the NEPA process. According to the CEQ's Environmental Justice Guidance, under the National Environmental Policy Act, agencies should consider the composition of the affected area to determine whether minority populations, low-income populations, or Indian tribes are present in the area affected by the proposed action, and if so whether there may be disproportionately high and adverse environmental effects. Communities may be considered "minority" under the executive order if one of the following characteristics apply:

- The cumulative percentage of minorities within the affected environment is greater than 50%, or
- The cumulative percentage of minorities within the affected environment is meaningfully greater than the minority population percentage in the general population or other appropriate unit of geographic analysis.

Communities may be considered "low-income" under the executive order if one of the following characteristics applies:

- The median household income for a census tract is below the poverty line (primary method of analysis), or
- Other indications are present that indicate a low-income community is present within the census tract (secondary method of analysis).

The 2014 poverty guidelines for the 48 contiguous states and the District of Columbia, as provided by the U.S. Department of Health and Human Services, define the poverty level as \$11,670 for a 1-person family/household, \$15,730 for a 2-person household, and \$23,850 for a 4-person household (HHS, 2014).

The project site is located within Census Tract 213.04, which includes the adjacent portion of Jamul that is south and/or east of Proctor Valley Road, Jefferson Road, Lyons Valley Road and Skyline Truck Trail. The U.S. Census Bureau estimated the 2014 median household income for Census Tract 213.04 was \$111,513, significantly higher than that of the County (\$63,996) and the State (\$61,489) for the same period (US Census Bureau, 2014). The estimated 2014 racial composition of Census Tract 213.04 was 65 percent white, 27 percent Hispanic or Latino, 3 percent American Indian, 1.6 percent black, and 1.4 percent Asian, with the remaining 2 percent of other races (US

Census Bureau, 2014). For comparison, San Diego County had an estimated 2014 racial composition of 47.5 percent white, 32.7 percent Hispanic or Latino, 0.4 percent American Indian, 4.7 percent black, and 11.1 percent Asian, with the remaining 3.6 percent of other races (US Census Bureau, 2014).